

# Special Considerations for Multijurisdictional Outbreaks

**A** multijurisdictional foodborne disease event requires the resources of more than one local, state, territorial, tribal, or federal public health or food-regulatory agency to detect, investigate, or control. A multijurisdictional investigation might involve a foodborne disease outbreak or the distribution or recall of a contaminated food product.

These guidelines are intended to help improve communication and coordination among agencies at all levels of government that are investigating multijurisdictional outbreaks. The guidelines are proposed to help agencies identify multijurisdictional outbreaks and increase the speed of investigating and controlling outbreaks.

## 7.0. Introduction

Specifically, the guidelines have the following objectives:

- Define when an outbreak is considered multijurisdictional;
- Establish a framework for rapidly assessing whether a given foodborne disease event affects multiple jurisdictions;
- Promote early and effective communication and coordination among agencies involved in multijurisdictional investigations;
- Detail specific actions, including conducting rapid, detailed exposure assessments of cases and investigational trace-backs of the source for suspected food items, that might be needed in a multijurisdictional outbreak;
- Provide guidance on managing the transition between the phases of an outbreak investigation during which leadership of the investigation changes; and
- Provide guidance on post-outbreak debriefing and dissemination of findings.

### 7.0.1. Scope

These guidelines are subject to two major limitations. First, foodborne disease outbreak investigation activities are subject to state law. Thus, these guidelines might need to be adapted to reflect the relationships between state and local agencies within a state. Second, these guidelines cannot cover all possibilities that might emerge during an outbreak investigation. However, the principles of communication and coordination established by these guidelines should help to quickly resolve problems.

For ease of reading, these guidelines focus on relationships among local, state, and federal levels. Although territories, tribal lands, military installations, and the District of Columbia are independent administrative structures with unique legal standing, the general principles of multijurisdictional investigations articulated here should be useful for health officials in these areas as well.

## 7.1. Background

In the United States, local or state public health or food-regulatory agencies conduct most investigations of foodborne illness following routine policies and procedures. In many local agencies, sporadic cases of specific foodborne disease are investigated by communicable disease control or public health nursing programs. Consumer complaints about foodborne illness frequently are investigated by food-regulatory programs. However, outbreak investigations usually require coordination among these programs at the local level. Thus, effective communication and coordination at all levels of an organization generally are required for successful investigations of foodborne disease outbreaks.

In 2001, the National Food Safety System Project, Outbreak Coordination and

Investigation Workgroup, published guidelines for improving coordination and communication in investigations of multistate foodborne disease outbreaks. The National Food Safety System multistate guidelines were developed specifically to address the challenges of coordinating large and complex investigations of foodborne disease outbreaks among multiple states and federal public health and food-regulatory agencies.

Since development of these guidelines, the terrorist attacks on September 11, 2001, raised concerns about the potential for intentional contamination of food at all levels of the food system, which would require interaction among agencies that previously had not worked together. In addition, large multistate case clusters and foodborne disease

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outbreaks have continued. For example, during 2006–2010, at least 25% of foodborne disease outbreaks reported to the Centers for Disease Control and Prevention (CDC) Electronic Foodborne Outbreak Reporting System (eFORS now renamed the National Outbreak Reporting System [NORS]) involved multistate or multicounty exposures or affected residents of multiple states or counties (Table 7.1). Furthermore, 59% of *Escherichia coli* O157:H7 outbreaks and 48% of *Salmonella* outbreaks were multijurisdictional, discovered largely through PulseNet. Because of this system, awareness has increased about the relative frequency and importance of multijurisdictional outbreaks. Thus, for these most important foodborne pathogens, the need for multijurisdictional coordination should be anticipated during the earliest stages of an investigation.

The Council to Improve Foodborne Outbreak Responses (CIFOR) was created in 2006 to help develop model programs and processes to facilitate the investigation and control of foodborne disease outbreaks. CIFOR determined that one priority would be to go beyond multistate outbreaks by also developing guidelines for multijurisdictional outbreaks. Multijurisdictional guidelines apply to multiple states but also include localities within a state and outbreaks involving multiple agencies (Table 7.2).

Recent experiences with multijurisdictional investigations have pointed to two overriding concerns with communication and coordination of multijurisdictional investigations. The first is to establish criteria by which a local health agency can recognize that a foodborne disease outbreak under

**Table 7.1. Number of multistate exposure, multistate resident, multicounty exposure, and multicounty resident outbreaks, by etiology, United States, 2006–2010**

ETIOLOGY AND AGENT	NO. OUTBREAKS					% OUTBREAKS
	TOTAL OUTBREAKS	MULTISTATE EXPOSURE	MULTISTATE RESIDENT	MULTICOUNTY EXPOSURE	MULTICOUNTY RESIDENT	MULTI - JURISDICTIONAL
Confirmed Etiology	2386	81	268	108	336	33
<i>Escherichia coli</i> O157:H7	148	28	16	21	22	59
<i>Salmonella</i>	591	42	81	55	106	48
<i>Clostridium perfringens</i>	104	0	8	0	15	22
<i>Staphylococcus aureus</i>	38	0	2	0	10	32
Hepatitis A	14	0	3	0	3	43
Norovirus	1093	1	12	8	98	21
Other	398	10	34	24	82	38
Suspected Etiology	881	0	58	5	79	16
Unknown Etiology	1581	0	130	29	127	18
Multiple Etiologies	141	5	4	3	12	17
<b>TOTAL</b>	<b>4924</b>	<b>84</b>	<b>460</b>	<b>145</b>	<b>554</b>	<b>25</b>

## 7.1. Background

**Table 7.2. Categories of multijurisdictional outbreaks**

1. Outbreaks affecting multiple local health jurisdictions (e.g., city, county, town) within the same state
2. Outbreaks involving multiple states
3. Outbreaks involving multiple countries
4. Outbreaks affecting multiple distinct agencies (e.g., public health, food-regulatory, emergency management)
5. Outbreaks, regardless of jurisdiction, caused by highly pathogenic or unusual agent (e.g., <i>Clostridium botulinum</i> ) that may require specialized laboratory testing, investigation procedures, or treatment
6. Outbreaks in which the suspected or implicated vehicle is a commercially distributed, processed, or ready-to-eat food contaminated before the point of service
7. Outbreaks involving large numbers of cases that may require additional resources to investigate
8. Outbreaks in which intentional contamination is suspected

investigation is multijurisdictional and to facilitate rapid communication of that fact to all affected agencies. The second is to establish effective means of integrating local agencies into large, multistate investigations that are detected and coordinated on a national level.

The passage of the Food Safety Modernization Act (FSMA) in 2011 gave new authorities to the Food and Drug Administration (FDA) and enhanced surveillance and response capacity at local, state and federal levels. Specifically related to multijurisdictional outbreaks, the FSMA directs CDC and FDA to:

- Improve coordination and data sharing with public health partners and the public;
- Increase state and local participation in national surveillance networks;

- Expand and integrate national surveillance systems; and
- Enhance laboratory and epidemiologic methods for agent identification and outbreak detection and investigation.

Coordinating offices for foodborne illness investigations in the three primary federal agencies include:

- CDC: Outbreak Response and Prevention Branch;
- FDA: Coordinated Outbreak Response and Evaluation Network (CORE); and
- U.S. Department of Agriculture Food Safety and Inspection Service (USDA-FSIS): Applied Epidemiology Staff, Office of Public Health Science

## 7.2. Major Indicators of a Multijurisdictional Outbreak and Notification Steps

After a foodborne disease event is recognized that requires multijurisdictional investigation, agencies that might need to participate in the investigation and agencies that might be otherwise affected by the event should be immediately notified (Table 7.2). Specific examples of these indicators and required

notification steps are described below (Table 7.3). In some states, functions identified as occurring at the local level might be performed at the state level. Further guidance on the role of federal agencies in food safety is available at [www.foodsafety.gov/about/federal](http://www.foodsafety.gov/about/federal).

## 7.2. Major Indicators of a Multijurisdictional Outbreak and Notification Steps

**Table 7.3. Examples of major indicators and required notification steps**

OUTBREAK DETECTION	MAJOR INDICATOR	NOTIFICATION STEPS
Local Level	Commercially distributed, processed, or ready-to-eat food contaminated before point of service suspected or implicated as outbreak vehicle.	Immediately notify state health department, relevant state food-regulatory agency, CDC, and FDA or USDA-FSIS (depending on product and on local and state reporting requirements).
	Fresh produce item contaminated before point of service is suspected or implicated as outbreak vehicle.	Immediately notify state health department, relevant state food-regulatory agency, CDC, and FDA, depending on state and local reporting requirements.
	Ground beef is suspected or implicated in an outbreak of <i>Escherichia coli</i> O157:H7 infections.	Immediately notify state health department, relevant state food-regulatory agency, CDC, and USDA-FSIS, depending on state and local reporting requirements.
	One of the “big six”, non-O157 Shiga toxin-producing <i>E. coli</i> is identified as the etiologic agent in an outbreak. These include <i>E. coli</i> serogroups O26, O45, O103, O111, O121, and O145.	Immediately notify state health department, relevant state food-regulatory agency, CDC, and FDA or USDA-FSIS, depending on product and state and local reporting requirements.
	Molecular subtype characteristics of etiologic agent match the pattern of an agent independently associated with other foodborne disease outbreaks.	Immediately notify state health department, relevant state food-regulatory agency, CDC, and FDA or USDA-FSIS, depending on product and state and local reporting requirements.
	Intentional contamination of food item is suspected or implicated.	Immediately notify state health department, relevant state food-regulatory agency, CDC, and FDA or USDA-FSIS (depending on product), local law enforcement, and FBI.
	Illnesses are associated with multiple restaurants or food-service establishments, especially when those establishments are part of the same chain.	Immediately notify state health department, relevant state food-regulatory agency, and CDC, depending on local and state reporting requirements.
State Level	Increase in sporadic infections with common subtype characteristics identified across multiple jurisdictions.	Immediately notify affected local agencies, CDC, and state and federal food-regulatory agencies.
	Multiple common-source outbreaks linked by common agent, food, or water.	Immediately notify affected local agencies, CDC, and relevant state and federal food-regulatory agencies.
	Microbiological food testing by state food-regulatory agency prompts recall.	Immediately notify affected state and local public health agencies, CDC, and relevant federal food-regulatory agencies.

## 7.2. Major Indicators of a Multijurisdictional Outbreak and Notification Steps

**Table 7.3. Examples of major indicators and required notification steps**  
*Continued*

	Illnesses are associated with multiple restaurants or food-service establishments, especially when those establishments are part of the same chain.	Immediately notify relevant state food-regulatory agency and CDC, depending on product and local and state reporting requirements.
Federal Level	Increase of sporadic infections with common subtype characteristics identified across multiple states.	Immediately notify affected state and local public health agencies and federal food-regulatory agencies.
	Multiple common-source outbreaks linked by common agent, food, or water.	Immediately notify affected state and local public health agencies, CDC, and relevant state and federal food-regulatory agencies.
	Microbiological food testing by, or reported to, FDA or USDA-FSIS prompts recall.	Immediately notify affected state and local public health agencies, CDC, and relevant state and federal food-regulatory agencies.

Abbreviations: CDC = Centers for Disease Control and Prevention; FDA = Food and Drug Administration; USDA-FSIS = U.S. Department of Agriculture Food Safety and Inspection Service; FBI = Federal Bureau of Investigation.

## 7.3. Coordination of Multijurisdictional Investigations

After affected agencies are notified, coordinating the multijurisdictional investigation might require establishment of a coordinating office to collect, organize, and disseminate data from the investigation. Depending on the scope and nature of the multijurisdictional event, the coordinating office might be located at a local or state public health or food-regulatory agency or at CDC, FDA, or USDA-FSIS.

Several principles guide the decision about where to locate the coordinating office for a given multijurisdictional investigation. The primary goal is to avoid interagency conflict about coordination that might distract from prompt conduct of the investigation and to present unified, consistent messages to the public.

- **Outbreaks are most efficiently investigated as close to the source as possible.** In general, investigations should be coordinated

at the level at which the outbreak originally was detected and investigated. This is likely to be where most relevant investigation materials will reside, which can facilitate organization and analysis of data. An outbreak involving several local health agencies might best be coordinated by a lead local agency. Similarly, investigation of a multistate outbreak with most cases in one or a few adjacent states might best be coordinated by a lead state agency. Investigations of outbreaks of more widely dispersed sporadic cases might best be coordinated by CDC.

- **The coordinating office must have sufficient resources, expertise, and legal authority to collect, organize, and disseminate data from the investigation.** Many local agencies might not have sufficient resources to effectively coordinate a multijurisdictional investigation, or state rules might assign jurisdiction over multicounty investigations

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to the state health department. In these situations, the coordinating office should be located at the state level. In multistate investigations, the coordinating office should be located at CDC if no individual state is prepared to do so. In multistate investigations led by an individual state, CDC should support the investigation in coordination with the lead agency.

- **Outbreak investigations progress through phases of activity, and leadership of the investigation should reflect the focus of the investigation at the time.** Typically, epidemiologic efforts to characterize the outbreak by person, place, and time dominate the early stages of an investigation. Efforts to identify the mode of transmission and food vehicle begin to incorporate environmental health specialists and food regulators. Determining contributing factors and environmental antecedents, conducting regulatory trace-backs, and implementing control measures move the investigation into the food-regulatory realm. Transition of leadership within the outbreak control team should be planned in advance by consensus and communicated to the entire team. These phases might not occur independently of each other during the investigation. These phases of activity can be elaborated as follows:
  - **Investigation of the “human illness outbreaks phase” should be coordinated within the appropriate public health agencies.** In addition to public health agencies’ greater expertise and experience in conducting these investigations, rules governing the reporting and collection of information about human patients require that authorized public health agencies maintain and protect that information. Although de-identified information can be shared across agencies, the redaction process can reduce the value of information available for analysis.

- **Investigations of the “food contamination phase” should be coordinated within food-regulatory agencies.** In addition to food regulatory agencies’ greater expertise and experience with these investigations, rules governing the collection of product manufacturing and distribution information might dictate that authorized food-regulatory agencies not share that information with outbreak investigators in other agencies.
- **When an incident involves an agricultural commodity and the bulk of the commodity is produced in a limited number of states, those state agricultural agencies should be informed of the outbreak and its progress.** They too will be receiving inquiries about the safety of their produce/product and have a legitimate interest and role in determining possible sources of the vehicle, as well as preparing for potential environmental health assessments to determine possible points of contamination, take appropriate samples, etc. Communication with those states, even where no cases occur in those states, is essential.
- **Sharing of information between public health and food-regulatory agencies is critical to the effectiveness of multijurisdictional investigations.** Ensuring the facilitation of rapid and open information sharing can greatly enhance the efficiency and effectiveness of multijurisdictional investigations. Because these activities build on each other, establishing information-sharing protocols during the earliest stages of the investigation is critical. State, local, and federal public health officials should ensure that their agencies have the legal authorities needed to share information and that their professional staff understand those authorities. Unless state and local public

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health officials have been commissioned to receive confidential information from FDA, they might need to work directly with the establishment implicated in the outbreak to obtain those data. FDA's Office of Partnerships has a commissioning and credentialing program that enables the sharing of commercial confidential information to Commissioned Officials and/or signatories of Confidentiality Agreements (if you want to become a Commissioned Official or if your state can sign a 20.88 Confidentiality Agreement, see [www.fda.gov/ForFederalStateandLocalOfficials/CommunicationbetweenFDAStateLocalandOfficials/Commissioning/default.htm](http://www.fda.gov/ForFederalStateandLocalOfficials/CommunicationbetweenFDAStateLocalandOfficials/Commissioning/default.htm)).

- **Identifying the source of a multijurisdictional outbreak is a collaborative process among local, state, and federal agencies and industry.** Individual food companies and trade associations should be engaged early on to help with the investigation. Industry collaborators might be able to provide important information about food-product identities, formulations, and distribution patterns that can improve hypothesis generation and assist in investigational trace-back efforts to aid hypothesis testing. Early engagement of industry also can facilitate control measures by enabling affected industries to implement orderly product withdrawal or recall procedures.
- **Releasing public information about the outbreak should be coordinated with the lead investigating agency, when feasible.** Although the public and news media are not aware of most outbreak investigations, the results of investigations are public information. In addition, responding to media attention is important to address public concerns about the outbreak. Although individual agencies participating in the investigation might be obligated to respond to media inquiries, a coordinated

communications plan can help provide a consistent, unified message about the progress of the investigation, the source of the outbreak, or any prevention activities that the public can do to protect itself. Coordinating communications with the media is particularly important when media attention is needed for public action to avoid exposure to a specific contamination source, such as a recalled food product.

- **Most health departments have incident command systems (ICS) that guide outbreak responses within the public health agencies. Historically, investigations of multijurisdictional foodborne disease outbreaks have not required formal activation of ICS. However federal agencies are now mandated to use ICS for response to outbreak incidents.** ICS are structures that provide for internal communications within a government system among primary event responders, public information officers, and security and safety officers and for external liaison with various organizations. In concept, the ICS structures provide for communication and coordination among agencies responding to a multijurisdictional outbreak of foodborne disease. However, even though the principles of multijurisdictional investigations might be similar to ICS responses, in many states and local jurisdictions, ICS are formal structures controlled by public safety officials with no other jurisdiction for food safety or outbreak control. In these situations, activating ICS might initiate actions that distract from the prompt conduct of the investigation. Agencies involved in investigation and response to foodborne disease outbreaks should decide in advance whether and how to apply an ICS, and, if applicable, incorporate the ICS structure into their response planning. Such planning should be coordinated with all other agencies that might be drawn into the investigation and response over time.

## 7.3. Coordination of Multijurisdictional Investigations

Homeland Security Presidential Directive 5 (HSPD-5), Management of Domestic Incidents, called for the establishment of a comprehensive, national incident management system ([www.gpo.gov/fdsys/pkg/PPP-2003-book1/pdf/PPP-2003-book1-doc-pg229.pdf](http://www.gpo.gov/fdsys/pkg/PPP-2003-book1/pdf/PPP-2003-book1-doc-pg229.pdf)). As a result, the Department of Homeland Security released the National Incident Management System (NIMS) and required all federal agencies to incorporate and use NIMS for incident response. HSPD-5 was replaced by Presidential Policy Directive 8 in 2011, which still relies on NIMS as the organizing framework for national preparedness ([www.fas.org/irp/offdocs/ppd/ppd-8.pdf](http://www.fas.org/irp/offdocs/ppd/ppd-8.pdf)). NIMS is a comprehensive, standardized, scalable, and flexible system used by all levels of government to manage and coordinate emergencies and

other major incidents. Some states also have mandated use of NIMS for incident response. All Rapid Response Teams are NIMS trained (see Chapter 3, section 3.1.2.8).

Except for federal agencies, most foodborne disease outbreak investigations do not require formal activation of ICS, but they might benefit from application of ICS principles and methods. **However, if a person who claims to have tampered with food contacts an agency, or in any outbreak in which intentional contamination is suspected, notification of law enforcement officials and assessment of the credibility of the threat are essential.** If the threat is credible, the outbreak will move into a law enforcement realm with activation of the ICS.

## 7.4. Outbreak Detection and Investigation by Level

The following sections are organized by the level at which an outbreak is recognized and the actions that should follow that recognition.

### 7.4.1. Outbreak Detection and Investigation at the Local Level

#### 7.4.1.1. Detect outbreak

- Outbreaks are detected at the local level by one of the following means:
- Consumer complaint identifies group exposure with multiple illnesses;
- Multiple consumer complaints received about the same source;
- Health-care provider reports group exposure with multiple illnesses;
- Investigation of sporadic case identifies group exposure with multiple illnesses; or
- Investigation of sporadic case cluster identifies common source.

Complaints may be made to a health-care provider, public health agency, point of sale,

poison control center, or the media, among others.

#### 7.4.1.2. Ensure notification

With initiation of an outbreak investigation, a local agency should **ensure notification of the following agencies**, and provide subsequent updates as appropriate in accordance with state procedures:

- Affected and surrounding county and city health departments (i.e., epidemiology, environmental health, public health laboratory); and
- State health department (i.e., epidemiology, environmental health, laboratory).

#### 7.4.1.3. Provide coordination

During the investigation, a local agency needs to **coordinate** the epidemiology, environmental health, regulatory, and laboratory components of the investigation.

When findings indicate that multiple jurisdictions might be involved, additional

## 7.4. Outbreak Detection and Investigation by Level

communication and coordination are needed:

- Referrals and requests for assistance in **incidents of local significance.**

**Incident:** Local agency identifies a likely foodborne disease outbreak in another jurisdiction.

**Action: Ensure notification** of the affected jurisdiction immediately.

**Incident:** Common-source outbreak identified in one jurisdiction has cases among persons who reside in two or more local jurisdictions.

**Action: Request assistance** to contact and interview cases in other jurisdictions.

**Incident:** Local agency identifies a likely foodborne disease outbreak with exposure or food source in another jurisdiction.

**Action:** Notify appropriate public health and regulatory agencies in the jurisdictions with the food source or exposure.

These investigations are handled in accordance with **routine policies and procedures under local agency leadership** unless otherwise specified by state procedures. The level of state involvement depends on local or state protocols.

- Referrals and requests for assistance in incidents representing a **transition from local to state significance.**

**Incident:** Common-source outbreak identified in one jurisdiction, investigation implicates processed food or fresh produce item, contaminated before the point of service, in absence of local contributing factors.

**Action: Ensure notification** of appropriate food-regulatory agencies of probable contaminated food vehicle; **conduct investigational trace-back** to identify source to the point where contamination most likely occurred; or

determine whether responsibility for the investigation needs to be transferred to a state or federal agency.

**Action: Ensure notification** of other jurisdictions that might be investigating similar related events of the results of outbreak investigations regarding agent and vehicle.

**Action: Subtype** agent; **upload patterns** to PulseNet.

**Incident:** Common-source outbreak identified in one jurisdiction, linked to outbreaks identified in other local jurisdictions by common agent, food, or water.

**Action: Ensure notification** of appropriate food-regulatory agencies and other jurisdictions, as described above.

**Action: Subtype** agents associated with outbreaks; **upload patterns** to PulseNet.

**Action: Establish coordinating office** (or individual) for the investigations to **collect, organize, and disseminate** all the data.

**Incident:** Cluster(s) of sporadic infections with common subtype characteristics identified in one local jurisdiction.

**Action: Upload patterns** to PulseNet.

**Action: Interview cases** as soon as possible using a detailed exposure questionnaire to obtain detailed food and environmental exposure histories, including product brand and retail source. Compile exposure histories and compare with expected exposure levels from Atlas of Exposures (<http://www.cdc.gov/foodnet/studies/population-surveys.html>), cases not associated with the cluster, or non-ill community controls.

**Action: Ensure notification** of appropriate food-regulatory agencies

## 7.4. Outbreak Detection and Investigation by Level

to initiate investigational trace-backs of suspected food items to elaborate and test hypotheses.

**Action: Ensure notification** of other jurisdictions likely to have additional cases, and **distribute** summary data about cases, descriptive epidemiology, investigation protocols, and standardized questionnaires to jurisdictions.

**Action: Establish coordinating office** (or individual) for investigation to **collect, organize, and disseminate** all the data.

These investigations require information sharing and coordination among multiple local agencies under local agency leadership unless otherwise specified by state procedures. The state receives information and provides consultation.

### 7.4.2. Outbreak Detection and Investigation at the State Level

#### 7.4.2.1. Detect outbreak

- Outbreaks typically are detected at the state level by one of the following means:
- Common-source outbreaks in multiple local jurisdictions, or multiple states linked by a common agent, food, or water.
- Cluster(s) of sporadic infections with common subtype characteristics identified across multiple local jurisdictions.
- An identified statewide increase in sporadic infections with common subtype characteristics.
- Information or alert from another public health agency, food regulatory agency, or another country.

#### 7.4.2.2. Ensure notification

With initiation of an outbreak investigation, the state public health agency should **ensure notification of the following agencies** and provide subsequent updates as appropriate:

- All local health departments likely to be affected by the outbreak or involved in the investigation.
- The state food-regulatory agency, which often has responsibility for conducting investigational trace-backs of suspected food items.
- Other state health departments (e.g., regional counterparts, or potentially nationally through Epi-X, PulseNet, the Foodborne Outbreak email subscribers, or similar networks).
- CDC (Outbreak Response and Surveillance Team).
- Federal regulatory agency offices (e.g., USDA-FSIS, FDA, Environmental Protection Agency), depending on the nature and status of the investigation.

Agency media personnel also should be engaged as early as possible to assist with messaging and to ensure consistency of message among agencies.

#### 7.4.2.3. Provide coordination

During the course of the investigation, a state agency needs to **coordinate** among the epidemiology, environmental health, and laboratory components of the investigation at the state level and **ensure that state epidemiology, environmental health, and laboratory programs are communicating and coordinating** activities with counterparts at the local and federal levels.

- Referrals and requests for assistance in **incidents of state significance**.

**Incident:** Case clusters in multiple local jurisdictions or statewide increase of sporadic infections with common subtype characteristics identified.

**Action: Upload patterns** to PulseNet.

**Action: Ensure notification** of all local jurisdictions; **distribute** summary data about cases, descriptive epidemiology,

## 7.4. Outbreak Detection and Investigation by Level

investigation protocols, and standardized questionnaires.

**Action: Request** that local agencies **interview cases** as soon as possible using a detailed exposure questionnaire to obtain detailed food and environmental exposure histories, including product brand and retail source. **Assess** the availability and willingness of local agency staff to conduct timely interviews. **Provide support** needed to ensure **timely conduct of interviews**. As investigations heat up, priorities will need to be adjusted. Evening and weekend work commonly is required. Interviews should not be delegated to agencies or individuals unable to make the investigation a top priority.

**Action: Ensure notification** of appropriate food-regulatory agencies of the possible need to conduct investigational trace-backs of suspected food items to elaborate and test hypotheses.

**Action: Establish coordinating office** (or individual) for investigations to **collect, organize, and disseminate** all the data.

**Incident:** Common-source outbreaks in multiple jurisdictions or multiple states linked by common agent, food, or water. When a particular exposure is epidemiologically implicated or strongly suspected:

**Action: Ensure notification** of all local jurisdictions, all states, and federal agencies of the results of outbreak investigations about agent and vehicle.

**Action: Ensure notification** of appropriate food-regulatory agencies of the probable contaminated food vehicle in commercial distribution; **conduct investigational trace-back** to identify source to the point where contamination most likely occurred; or determine whether responsibility for regulatory

action needs to be transferred to a federal agency.

**Action: Subtype agents** associated with outbreaks; **upload patterns** to PulseNet.

**Action: Establish the coordinating office** (or individual) for investigations to **collect, organize, and disseminate** all the data. In cooperative investigations, make raw data readily available in a common format to interested participants from all participating agencies.

The resources of one or more local jurisdictions cannot adequately respond to these events following routine procedures. These investigations **require active participation** from multiple local agencies, typically under **state agency leadership**. The state provides response coordination, consultation, and information sharing. On the basis of established procedures, emergency management systems might be activated at the local level or possibly state level. Federal agencies are notified and involved depending on product type and distribution.

Multistate outbreaks and outbreaks associated with regionally or nationally distributed food products involve a **transition from state to national significance**. These outbreaks might require regional or national resources. Although they **require active participation** from multiple local agencies and state **response coordination, consultation, and information sharing**, they also may require **federal agency leadership**, depending on the capabilities and willingness of the states involved. In a small number of events, emergency management systems might be activated at local and state levels and possibly at the federal level.

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### 7.4.3. Outbreak detection and investigation at the federal level

#### 7.4.3.1. Detect outbreak

Outbreaks are detected at the federal level by one of the following means:

- Common-source outbreaks in multiple states linked by common agent, food, or water;
- Cluster(s) of sporadic infections with common subtype characteristics identified in multiple states; or
- Regional or national increase of sporadic infections with common subtype characteristics identified.

#### 7.4.3.2. Ensure notification

When an outbreak investigation begins, the CDC Outbreak Response and Prevention Branch should **ensure notification** of and provide subsequent updates as appropriate to:

- State and local health departments (e.g., Epi-X, the Foodborne Outbreak email subscribers, PulseNet) and
- Federal regulatory agency offices (USDA-FSIS, FDA, Environmental Protection Agency).

#### 7.4.3.3. Provide coordination

During the investigation, federal agencies need to **coordinate** the epidemiology, environmental health, and laboratory components of the investigation at the federal level and **ensure that federal** epidemiology, environmental health, and laboratory **programs are communicating and coordinating** activities with their counterparts at the state and local levels.

- Referrals and requests for assistance in **incidents of national significance**.

**Incident:** Common-source outbreaks in multiple states linked by common agent, food, or water:

**Action: Ensure notification** of all state and local jurisdictions, as appropriate, of results of outbreak investigations regarding agent and vehicle.

**Action: Ensure notification** of appropriate food-regulatory agencies of likely contaminated food vehicle in commercial distribution; **conduct investigational trace-back** to identify source to the point where contamination most likely occurred.

**Action: Subtype** agents associated with outbreaks; **upload patterns** to PulseNet.

**Action: Establish coordinating office** (or individual) for investigations to **collect, organize, and disseminate** all the data.

**Incident:** Case clusters in multiple states or regional or national increase of sporadic infections with common subtype characteristics identified.

**Action: Ensure notification** of all states and local jurisdictions, as appropriate; **distribute** summary data about cases, descriptive epidemiology, investigation protocols, and standardized questionnaires.

**Action: Request** that local or state agencies **interview cases** as soon as possible using a detailed exposure questionnaire to obtain detailed food-exposure histories, including product brand and retail source. **Assess** the availability and willingness of local or state agency staff to conduct interviews in a timely manner. **Provide support** needed to ensure the **timely conduct of interviews**.

**Action: Ensure notification** of appropriate food-regulatory agencies of the possible need to conduct investigational trace-backs of suspected food items to elaborate and test hypotheses.

## 7.4. Outbreak Detection and Investigation by Level

**Action: Establish coordinating office** (or individual) for investigations to **collect, organize, and disseminate** all the data.

These outbreaks require activation of local, state, regional, and national resources to

contain disease and protect human health. They require active participation from multiple local agencies, state response coordination, consultation and information sharing, and federal agency leadership. Emergency management systems might be activated at local, state, and federal levels.

## 7.5. Multijurisdictional Outbreak Investigations After-Action Reports and Reporting to eFORS

The organizations involved should hold a conference call 1–3 months after the initial investigation ends to review lessons learned and to update participants about findings, conclusions, and actions taken. Consider including consumer groups in this conference call or hosting a conference call specifically for consumer groups, to help them understand what happened and what is being done to prevent recurrence. Also consider including industry representatives to help disseminate lessons learned from the investigation.

The lead agency(ies) coordinating the investigation should prepare an after-action report after the conference call. The report should summarize the effectiveness of communication and coordination among jurisdictions and identify specific gaps or problems that arose during the investigation.

All participating agencies should have the opportunity to review and comment on the report before it is more widely distributed. The lead agency(ies) should review after-action reports periodically to determine whether common problems in investigation or response are occurring over time; this can help with an agency's quality improvement efforts.

All multijurisdictional investigations should be reported by individual states to NORS. The multijurisdictional nature of the investigation should be indicated by completion of appropriate data fields in the NORS report form. Individual state reports will be consolidated by CDC as part of a multistate outbreak report. In addition, FDA and USDA-FSIS write a summary report of each investigation.