A Model Approach to Developing Food Safety Emergency Response Standard Operating Procedures

By

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Abstract

State food safety programs are responsible for ensuring the safety of the food supply in their jurisdictions. Disasters can have profound effects on the safety of food. Currently, there is no information available for food programs to assist them in the development of emergency response procedures. The majority of the literature focuses on the development of overall state response structures and does not delve into the specifics for response at the program level. This research attempts to meld the broad literature on emergency response and the current practices of state food safety programs into a model document for state programs to use as a tool to update existing or develop new procedures.

The methods employed in this exploratory research are document analysis of current state food safety documents and interviews with state food safety personnel. The research was based on seven ideal type categories (All Hazard, Definitions of Disaster, Authority, Roles and Responsibilities, Communication and Coordination, Resources, and Familiarity) that were gleaned from the literature on emergency response management and used as a point of departure for further inquiry.

The findings of this research, while preliminary, were positive in nature. Due to the exploratory nature of the study, definitive results are not possible. The document created here is therefore not finished, but provides a starting point for further explorations and development.

Chapter 1 Introduction

The Pan American Health Organization (2000, p. 50) describes providing food protection measures as an environmental health priority after disasters. Except in rare cases, the U.S. Food and Drug Administration, (FDA 2002, p. 379) the federal agency that oversees the safety of the majority of the food supply, defers to local and state jurisdictions when it comes to the safety of the food supply in disaster situations. While states do have emergency response plans, these plans describe the overall state operation, for example, at the level of the governor, state emergency coordinator, and agency. These plans do not delve into the specific information needed for program staff responding to an emergency at the street level. There is a gap in the literature and in food safety programs[1] on a recommended structure and content for an emergency response procedure document.

Emergency Response Documents

The literature in the area of emergency response is ripe with information on the development of emergency response plans. But it is virtually silent on the procedures programs should develop to actually put the plans into effect. And, since there is no information on emergency response procedures for food safety programs, a combination of concepts from the broad topic of emergency response planning and actual state emergency operating procedures must be used to develop ideal categories for model food safety

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[1] During the early phases of research for this paper, over 50 letters were sent to State Food Safety Programs requesting copies of the program's procedures for responding to emergencies. Twenty-four states responded to the request. Of these twenty-four, only seven had documents that provided in depth instructions to program staff on how to respond to disasters. See Chapter 3 Methodology for more information.

emergency response procedures.   The Federal Emergency Management Agency (FEMA) describes three levels of emergency response operations planning documents. The first document, and the broadest, is the Emergency Operations Plan (EOP). This plan includes legal authorities, situations addressed by the plan, and areas of responsibilities for emergency operations on a statewide level.   The second level of documents is contained in the Functional Annex. Functional Annexes provide an increased level of detail to the response structure and are organized by broad tasks such as communication, warning, and evacuation. Annexes focus on a specific function of emergency response and outline how the agencies involved should perform. The basic plan and functional annexes do not include specific details of the response, but are instead broad in scope. Standard operating procedures (SOPs) in contrast, provide the most detailed instructions for responding organizations and work units identified in the Emergency Operations Plan. Table 1.1 provides examples of the increasing detail in different layers of emergency response planning documents, the EOP, the Functional Annex, and the SOP.

One of the problems associated with using the literature for emergency response planning is that the concept of "plan" and "procedures" can become blurred. FEMA makes a distinction between the two terms.

> Although the distinction between plans and procedures is fluid, writers of an EOP should use it to keep the EOP free of unnecessary detail….Information and "how to" instructions that need to be known only by an individual or group can be left to the SOPs. (FEMA 2002, p.1-7)

Since the literature discusses the development of plans (not procedures), and there is no source in the literature on the development of procedures, the concepts on emergency

response planning are used as a point of departure. Therefore, if the term "plan" is referred

to in this paper, it is only to distinguish that the source of the information came from the

broad literature of emergency response planning. The concepts obtained from the literature

are intended to provide a point of departure for further research in order to produce a

document that will assist food safety program personnel in creating standard operating

procedures for their programs. [2]

Table 1.1 Examples of the Increasing Detail in three layers of Emergency Response Documents

Document	Authority [3]- Examples
The Emergency Operations Plan (EOP) (At State Level)	• Constitution of the State of Texas • Executive Order of the Governor relating to Emergency Management • Texas Disaster Act of 1975(Texas Government Code, Chapter 418) • State of Emergency, Texas Government Code Chapter 433
↓	
Functional Annex (At lead agency level)	• Document references authority outlined in State Plan above
↓	
Standard Operating Procedures (At program level – hypothetical example)	• Texas Health and Safety Code Chapter 431, Texas Food, Drug, and Cosmetic Act • Texas Health and Safety Code Chapter 431, Texas, Food, Drug, and Cosmetic Salvage Act • Texas Administrative Code, Section 25, Chapter 229.541-554, Regulation of Food Salvage Establishments and Brokers • Texas Administrative, Section 25, Chapter 229.211-222, Current Good Manufacturing Practice and Good Warehousing Practice in Manufacturing, Packing, or Holding of Human Food.

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[2] This research is not intended to produce an actual model standard operating procedure for food programs. State programs work differently and many have a wide variety of responsibilities. It would be impossible to create an actual SOP that would work in every case. The decision, therefore, was made to create a document that assists programs in creating their own SOP. This decision also brings an added benefit as this tool may be helpful to local food programs and even other non-food programs that respond to emergencies.

[3] Authority is one of the ideal type categories included in the conceptual framework. See Tables 2.2 and 4.3 for more information.

Research Purpose

The purpose of this applied research project is to develop a document that will assist food safety personnel in developing food safety emergency response standard operating procedures (SOPs). The study explores the emergency response literature to identify initial ideal type categories for a food safety emergency response category. The conceptual framework developed from the literature review is used to further explore state food safety program SOPs that already exist across the country.   The combination of information obtained from the literature, document analysis of current state food safety emergency procedures, and interviews with state food safety programs are used to refine the initial categories. Finally these categories are incorporated into a document that assists food safety personnel by posing questions and topics for consideration in order to create a set of standard operating procedures that will work or their individual program.

The following chapter presents the literature review and the preliminary conceptual framework. Chapter three discusses the methods used to gather data. Chapter four details the document analysis of several state food safety program's emergency response procedures and finalizes the conceptual framework. Chapter five presents the assessment of the conceptual framework and presents the final document. A summary of the results and recommendations can be found in chapter six.

Chapter 2 Literature Review

Purpose

The purpose of this chapter is to review the literature on the field of emergency management in order to identify essential components of emergency operations plans and use this information to develop ideal categories for food safety emergency standard operating procedures. While there is extensive literature regarding emergency response planning, the majority of it centers on the development and management of emergency response at the local community level. Food safety emergency response is one small portion of the broad issue of emergency management. While the safety of the food supply in disasters is important, the role of food safety programs has been neglected.   After extensive research, no literature was found on this specific topic; therefore, the broader field of emergency management is reviewed and discussed. The knowledge gained from these broader concepts is applied to state food safety programs. This chapter explores the problems, history, and important components related to the field of emergency management with the ultimate goal of using this information to a tool state programs can use for developing model standard operating procedures for food safety emergency response.

Defining Disaster

In many cases the terms disaster and emergency are used interchangeably in the literature.   There is, however, an important nuance that distinguishes the two words. *The American Heritage College Dictionary* (1997, p.394, 449) defines a disaster as "an

occurrence causing widespread destruction and distress, a catastrophe". An emergency is defined as "a serious situation or occurrence that happens unexpectedly and demands immediate attention." Thus using the dictionary's definition, the word emergency can include every day occurrences.   The field of emergency management, however, is focused on the preparations for responding to the urgent needs generated by an event of widespread destruction (disaster), not everyday emergencies (Crichlow 1997). This distinction between the two terms is confusing and seldom addressed in the literature. And while the framework developed from this research may be helpful in dealing with everyday emergencies such as train wrecks and other types of transport mishaps (Quarantelli 1997, p. 41), for the purposes of this paper the word disaster refers to the event causing widespread destruction and the word emergency refers to a serious situation brought on by a disaster that requires the need for immediate action.

The terms emergency planning, emergency management, and emergency response although sometimes used interchangeably in the literature, have different meanings from each other. Emergency planning sets out a strategy for emergency management to use as the framework for making decisions during disaster situations. Emergency response is the activity that results from the framework and subsequent management related directions during a disaster (Perry 1997, p. 203).

If asked, anyone could probably give examples of disasters; Hurricane Andrew, the North Ridge Earthquake, or even the attack on the World Trade Center. Researchers have traditionally placed disasters into the four categories of natural, technological, civil, and ecological (Hoetmer 1991, p. xxi). There is even an emerging category for disasters that

involves terrorism. (World Health Organization 2002, p. 3).   But what does the term disaster mean to the field of emergency management? Generally disasters are events that simply overwhelm. Crichlow explains that disasters are "unique events of immense complexity." Perry (1997, p. 201) further explains that in a disaster the social structure of communities is severely affected.   For instance, the state of California defines a disaster as "an event that overwhelms the resources of a jurisdiction" (Winslow 1996, p. 111). As stated in Sylves and Waugh (1996, p.273), New York defines an emergency as "any circumstance in which multiple city agencies must become involved to deal with a natural, technological, or social hazard that is assumed to have widespread life or health threatening events. These definitions focus on how the situation affects the community and response structure instead of the specific type of disaster. A critical component of emergency management is to develop a definition of disaster appropriate for the specific areas (state, county, city) so that the criteria used to declare an event as a "disaster," and therefore initiate a response, are pre-established. After all, the goal of emergency management is to bring the "community" back to normal as soon as possible (Kreps 1991, p.33).

Reacting to Disasters

Hightower and Coutu (1996, p. 82) assert that organizations do not react well to disasters. One contributing factor is those responsible for responding to disasters assume they can operate as they would in everyday emergencies. Disasters place people and organizations in unfamiliar territory. Responders are unexpectedly faced with new duties, new working relationships, and overlapping jurisdictional boundaries (Auf der Heide 1989).

When an organization assumes it can operate in a disaster as it does in a typical every day emergency, breakdowns in communication and coordination can occur (Crichlow 1997). Determining at what point a certain situation evolves into an emergency is another dilemma. Defining this point may be different depending on a community's location, resources, and experience with potentially damaging events (Auf der Heide 1989). If benchmarks are not pre-established, a community may be overwhelmed before decision makers realize initiation of an emergency response is needed (Hoetmer 1991, p. xvii). In fact, this assumption can lead to responders contributing to the disaster instead of providing assistance (Crichlow 1997).

Ideally, the goal of emergency management is to prevent a response from becoming part of the disaster itself. Quarantelli (1997, p.42) describes good disaster management as knowing the difference between agent and response generated needs. Agent generated needs are those resulting from the disaster alone. Response generated needs involve those arising from an organization's response to the disaster. An organization obviously cannot control a disaster, but it can control how it responds. Being prepared for problems such as utility outages, telephone system overloads, and dangerous operating conditions (Crichlow 1997) reduces confusion for responding agencies and brings the community back to normal in a more rapid fashion (Kreps 191, p. 34).

States and Emergency Response

As previously stated, the ultimate goal of this review is to learn about emergency response in order to create a tool to assist "state" food safety programs in developing their

own emergency response standard operating procedures. Mileti (1999, p. 226) is quite straightforward in saying, "currently very little is known about state level disaster response." The Federal Emergency Management Agency (FEMA) and Mileti (1999) agree that states have a role in emergency response. FEMA (1996, p. 1-1) identifies three roles that states play in disaster situations.   First, states aid local agencies in emergencies when their resources become overloaded. Second, in some cases, states may have to respond themselves to either the emergency or aspects of the emergency. Finally, states work with the federal government when both local and state resources become overloaded.   Mileti (1999, p. 219) goes on to say that states have broad authority in emergency response and is surprised by the lack of information on state emergency response programs.

Why is it that these programs are not discussed in the literature?   The reason may lie in public administration's historical view of emergency management. Bruce Clary (1985, p. 23) explains that state agencies do not consider emergency management as part of their mission. Petak (1985, p. 3) further clarifies that the field of public administration, to which state agencies belong, does not place emergency management as critical to daily activities and therefore deals with it intermittently on a crisis basis. In addition, states are reluctant to spend limited monetary and personnel resources on planning and training for emergency response (Clary 1985, p. 24).

Food in Disasters

Providing food protection measures is one of the environmental health priorities following a disaster (Pan American Health Organization 2000, p. 50).   During emergency

situations food production facilities, food warehouses, food distribution networks (p. 52), and

food served at shelters and camps (p. 55) require attention from food safety emergency

response teams to ensure food products are safe for public consumption. The U.S. Food and

Drug Administration (2002, p. 379) states, "the objectives…in the aftermath of non-attack

disasters is to determine whether or not foods… affected by the catastrophe are safe for

human use; and if not, to effectively remove them from commerce." What can happen to

food during a disaster? Before that question is addressed, a review of food hazards is

needed.

Three general categories of hazards that can cause illness or injury and in extreme

cases death, when consumed along with a food are biological, physical, or chemical

(McSwane 2003, p. 28). A new category, especially in view of the recent world events, is

radiological. (World Health Organization 2002, p. 3).   Biological hazards involve bacteria,

viruses, parasites, and fungi in a food product. Potential sources of microorganisms are soil,

water, and the gastro intestinal tracks of humans and animals (Center for Public Health

Education 2000, p. 18). Physical hazards are hard or soft objects such as glass, metal, dirt, or

stones in a food (McSwane 2003, p. 29). Chemical hazards can include such items as oils,

gasoline and lubricants (Center for Public Health 2000, p. 18). Chemical and biological

hazards are better known than radiological hazards affecting food, however, this hazard

should not be discounted, as radionuclear materials "are widely available for medical

research." (World Health Organization, 2002, p. 16).

During disasters such as floods, hurricanes, tornadoes, and earthquakes, foods are

subjected to many extreme conditions. They may be exposed to contaminated floodwaters,

flying debris, pressure change, fire, and electricity failures, to name just a few.   In any one

of these situations, biological, chemical, or physical hazards can be introduced into food

causing the product to be unsafe for human consumption (Food and Drug Administration

2002, p. 381). After the disaster, shelters or camps can also contribute to illness from food

consumption due to poor hygiene and kitchen sanitation (Pan American Health Organization

55). The Pan American Health Organization points out that environmental programs should

develop procedures to ensure environmental health services and conditions are adequate

(Pan American Health Organization 21). Table 2.1 summarizes the food safety implications

of different disaster situations.

In light of more recent world events, disaster planning should include procedures for

dealing with potential terrorism. Due to the criminal nature of the event, law enforcement

agencies may lead these investigations. A terrorism event involving food, however, may still

require an emergency response from traditional food safety response teams.   The World

Health Organization (2002, p. 3) defines food terrorism as,

> …an act or threat of deliberate contamination of food for human
> consumption with chemical, biological or radio nuclear agents for the purpose
> of causing injury or death to civilian populations and/or disrupting social,
> economic or political instability.

The "deliberate release of chemical, biological or radionuclear agents could

potentially cause severe harm and post a huge burden on public health systems" (WHO, 2002

p. 2). A food terrorism event could conceivably fall within the realm of disaster and require

a response from food safety programs.

 … in 1984, members of a religious cult contaminated salad bars in the USA with *Salmonella typhimurium*, causing 751 cases of salmonellosis. The attack appeared to be a trial run for a more extensive attached intended to disrupt local elections. The cult was also in possession of strains of the causative organism of typhoid fever…. (WHO, 2002, p. 4)

Table 2.1 Food Safety Implications in Disasters[4]

Disaster	Food Safety Implications	Hazard
Flood	• Safety of water supply used in food facilities[5] • Food items that are not in hermetically sealed containers that come in contact with flood waters may not be suitable for human consumption • Perishable items may spoil due to loss of power • Sewer and waste line back ups into food facilities • Increase of rodent and pest activity in flooded areas, product that escaped damage from flood waters may be contaminated due to rodent defilement	• Biological/Physical • Biological/Chemical/Physical • Biological • Biological • Biological/Physical
Hurricane	• Same issues described in Flood • Physical damage to food products • Food products contaminated by leaking containers of chemicals, oils, fertilizers, etc damaged in the storm	 • Physical • Chemical
Tornado	• Same issues as Flood and Hurricane	
Electricity Blackout	• Perishable items may spoil	• Biological
Biological/ Chemical Attack	• Food product contaminated with known or unknown agent	• Biological/Chemical/Radiological

Source: Investigations Operations Manual 2002, U.S Food and Drug Administration, p. 379-384.

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[4] During emergencies involving food, it is the job of the food safety programs at the national, state, and local level to assess the safety of the food supply. In each of these types of disasters, food safety personnel assess on a case by case basis whether the food is safe for human consumption and if not takes steps to remove the product from commerce.

[5] This Food Safety Implication came from my expert knowledge as an employee of the Bureau of Food and Drug Safety, Manufactured Foods Division. I included this implication based on experience dealing with inspections of food facilities. Food facilities must have a safe source of water in order to operate.

Emergency Management Policy Development

In 1803, Congress responded to a disastrous fire in the northeast by providing assistance to the state and local government. With this action, Congress began a patchwork of disaster related legislation. The legislation responded to the disasters with relief packages, but only after each event occurred. Between the years of 1803 and 1970 over 100 laws were passed to provide relief for specific disasters. In 1950, the first comprehensive and permanent law that addressed disaster relief and response passed the legislature (Clary 1985, p. 20). While it appeared that Congress was taking a more comprehensive approach to disasters through the enactment of The Disaster Relief Act of 1950, the practice of passing minor laws to deal with specific events continued, resulting in a fragmented disaster response policy (Drabek 1991, p. 6).

It wasn't until the Disaster Relief Act of 1974 that Congress passed assistance for both federal and state disaster preparedness and created the Federal Disaster Assistance Administration, the predecessor to the Federal Emergency Management Agency (FEMA) (Drabek, 1991, p. 9). After a recommendation by the National Governor's Association, Jimmy Carter created FEMA and a new era of a coherent strategy in emergency management began.

The strategy was called Comprehensive Emergency Management (CEM) (Crichlow 1991). According to Hoetmer (1991, p. xx), CEM is a conceptual framework for emergency programs and activities. With this framework, organizations can develop emergency management plans based on functions that are elemental regardless of the specific disaster (Hoetmer 1991 p. xxi). Crichlow and Petak (1997; 1985, p. 3) describe a four-phase

framework. Each phase is related, and since no place is immune from potential disaster, a

community is always in one of these phases.

Emergency Management

The four phases include mitigation, preparedness, response, and recovery. Petak

(1984, p.3) and Crichlow (1997) explain mitigation as essentially research and decision

making time for the community. Potential disaster hazards in a community are assessed and

programs implemented to prevent or reduce the effects. Crichlow (1997) provides an

example of potential hazards, " A farm field that floods one year might go unnoticed by

everyone except the farmer. However, if that farmer sells the land to housing developers, the

next flood will certainly be regarded as a disaster." Preparedness involves development of

response plans and training personnel (Petak 1985, p.3). Petak (1985, p.3) adds that this is

the time to assess resources and establish agreements among agencies in and outside of the

community.   The response phase occurs at the onset of a disaster and involves action based

on the plans developed during the preparedness phase.   The recovery phase is the time

period when the communities begin to return to normal. (Crichlow 1997) See Table 2.2 for

an illustration on the roles State Food Safety Programs might play in each one these phases.

Table 2.2 Food Safety Program Roles in Four Phases of Disaster Management

Phase	State Food Safety Program Activity
Mitigation	The program will review areas under their jurisdiction to determine potential hazards that may affect the food industry. For example in Texas the panhandle area is susceptible to tornados and the coastal areas are susceptible to hurricanes. Flooding is also an issue for several areas of the state.
Preparedness	The program spends time planning or reviewing procedures for responding to emergencies, trains staff in vulnerable areas of the state and support staff,

Phase	State Food Safety Program Activity
	educates industry on steps programs will take to ensure the safety of the food supply, meets with local, state and federal agencies to establish or maintain relationships to ensure adequate coordination during emergencies
Response	Food Safety programs begin the activation of the standard operating procedures. The work begins in the tail end of response as soon as conditions are safe and continues over into the Recovery phase.
Recovery	During this time, personnel will visit food facilities in the effected area to determine the soundness of the food supply, ask businesses to close if necessary, and seize and destroy contaminated food when required. Following the response, staff will reconvene and discuss the event to learn from any mistakes and assess any changes that may need to be made. At this point the program is moving back into the mitigation phase.

The Integrated Emergency Management System (IEMS) is another integral part of the

FEMA emergency management policy (Crichlow 1997). According to Hoetmer (1991, p.

xx), "CEM provides emergency management with a conceptual framework and IEMS shows

how the framework can be translated into action." The program requires communities to

analyze potential hazards and assess their status in each of the four categories with regard to

abilities and resources. Using this information, communities are able to develop emergency

response plans.

Many sources detail the important aspects of emergency management and how to use

proper planning to prevent contributing to a disaster by a confused and uncoordinated

response. The only source in the literature, however, on the style and format of an

emergency operations plan is FEMA. Using Comprehensive Emergency Management

(CEM) and Integrated Emergency Management Systems (IEMS), a community brainstorms

potential hazards and problems associated with disasters. With this information, an

emergency operations plan (EOP) can be created. According to FEMA (1996, p. 1-6) there

are three main objectives to an EOP: 1) keeping emergency response in state of readiness; 2)

helping to avoid responders from contributing to the emergency; and 3) enhancing a community's ability to respond. An emergency operations plan (EOP) consists of a Basic Plan, Functional Annexes, Hazard Specific Appendices (if needed) and Standard Operating Procedures for each organization identified in the EOP (FEMA 1996, p. 3-1).

The basic plan provides a broad view of the emergency response program by providing a broad concept of operations. The plan includes legal authorities, situations addressed by the plan, and areas of responsibility for emergency operations. Functional annexes are organized by broad tasks such as communication, warning, and evacuation. FEMA identifies eight core functions that should be addressed by annexes. The annex focuses on this specific function of emergency response and outlines how the agencies involved will perform (FEMA 1996, p. 3-3). For example, the State of Texas Emergency Response Plan contains an Annex on Health and Medical Services, one of the core functions listed by FEMA. The Annex outlines the agencies involved in coordinating health medical services during a disaster and identifies the lead agency. Hazard specific appendices are created for actions and organizations associated with specific disasters. For instance, an emergency at a nuclear power plant may require a very specialized response. But only jurisdictions with power plants would need to plan for this type of disaster. These are needs in addition to those identified in the basic plan and in any annex (FEMA, 1996, p. 3-3).

The basic plan and functional annexes do not include specific details of the response, but are instead very general in scope. Standard operating procedures (SOPs), in contrast, provide the most detailed instructions for responding organizations and work units identified in the EOP (FEMA 1996, p. 3-3). The following diagram illustrates each element of the

emergency operations planning starting with the section that is a broad overview and ending with the section that contains detailed instructions.

The Emergency Operations Plan

↓

Functional Annex

↓

Standard Operating Procedures
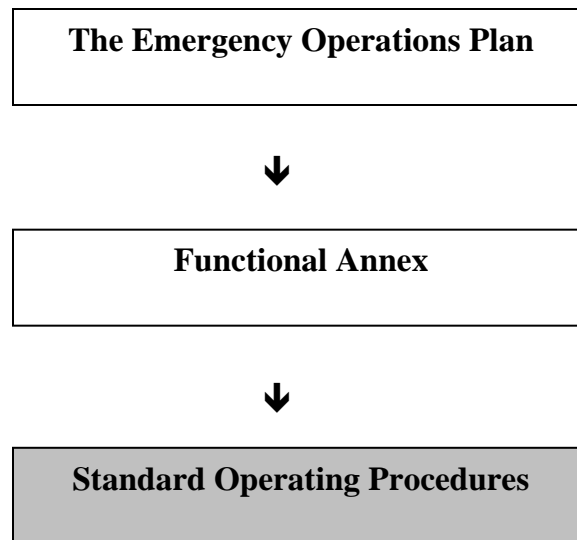
According to FEMA, (1996, p. 1-7) each program assigned a role in an EOP should have standard operating procedures. Standard operating procedures translate assigned roles into actions that need to be taken by responders in order to perform their responsibilities in a disaster. FEMA (1996, p. 1-7) only provides sketchy information about what components should be included in SOPs by stating, "normally, SOPs include checklists, call-down rosters, resource listings, maps, charts, etc, and give step by step procedures for notifying staff, obtaining and using equipment, communicating with other staff members that are operating at more than one location, etc." Since this document provides the "most detailed instructions" on how go about the process of responding to a disaster, it seems this is a very important piece of emergency response (FEMA 1996, p. 1-7). No other guidance, however,

is provided in any of the emergency management literature, on how to create the SOP document.

Important Components of Emergency Response Plans

The literature did not provide much in the way of what these detailed standard operating procedures should actually look like. But, it does provide a rich resource for essential components of a basic plan. As the ultimate goal of this research is to develop a tool for programs to use in developing standard operating procedures for food safety emergency response, components from existing literature that are described as critical to emergency response planning will be used as a starting point. There is some support in the literature for transferring these concepts to the SOP. FEMA (1996, p. 3-1) states, "since the jurisdiction's goal is a coordinated response, task based plans should flow from a Basic plan that outlines jurisdictions overall emergency organizations and its policies." It seems a logical assumption from this statement that SOPs should carry through on the same components contained in the basic plan. The SOPS will simply contain information more explicit to organization and work groups following the procedures. The preliminary components include:

- all hazard approach
- definition of disaster
- authority
- roles and responsibilities,
- communication and coordination
- resources
- familiarity

All Hazard Approach

Crichlow, Quarantelli, Sylves, and FEMA all agree that the best type of emergency response plan takes the all-hazard approach. Crichlow (1997) explains that all types of disasters lead to similar problems. Even though specific disasters cause varying effects, (hurricanes versus earthquakes) similar tasks still must be performed to initiate and carryout a response (Quarantelli 1997, p. 42). FEMA (1996, p. 3-3) acknowledges that a different plan could be created for each specific type of disaster. But an all-hazard approach saves communities time from having to create a plan for each eventual scenario (Crichlow 1997) and provides guidance if unanticipated events occur (FEMA 1996, p. 3-3). Though it took a while, Congress realized the benefits of the all hazard approach. Congress spent years passing laws following each disaster, creating a series of overlapping programs that often worked against each other during disasters. It wasn't until the formation of FEMA, that the benefits of the all hazard approach came to light (Sylves, p. 6). Therefore, operating procedures for food safety emergency response should reflect an all hazard approach.

Definition of Disaster

As previously stated, emergency management provides a framework for decision-making during disasters. Obviously if a hurricane has just hit an area of the country, deciding whether to initiate an emergency response procedure is fairly clear. At times, however, deciding at what point a routine emergency evolves into an event that stretches the limits of an organization's resources may be difficult. If benchmarks are not pre-established, a community may be overwhelmed before decision makers realize an event has transitioned

into an emergency (Hoetmer 1991, p. xvii). When definitions of disaster and the appropriate

response level needed at each level are provided in the emergency response plan, decisions

can be made in advance at what point emergency response duties are activated (Hoetmer

1991, p. viii). FEMA (1996, p. 2-7) explains this is an important component. Once the stages

are defined, communities can use them to project resource needs associated with each stage

identified. Therefore, definitions of what constitutes a disaster should be included in

operating procedures for food safety emergency response.

Authority

An important component of the basic emergency plan is the identification of laws,

regulations, and other documents that provide the authority for any actions taken during

emergency situations (FEMA 1996, p. 4-16).   The U.S. Food and Drug Administration

(2002, p. 379) specifically mentions that state and local governments usually take lead roles

in emergency situations to evaluate the safety of food as "their law and regulations can be

immediately invoked." FEMA (1996, p. 4-16) notes that it is important for personnel to

understand the "extent and limits" of their authority. As the legal basis identified at the level

of the basic plan are much broader and may not be the appropriate for actions taken at the

level of responders, it is important to identify laws and regulations more specific to the

potential activities of the people in the field. For example, The Texas Disaster Act of 1975

provides the authority to structure emergency management around organized government

and gives the Governor the authority to declare a state of emergency. The Texas Health and

Safety Code Chapter 431 and the regulations derived from this law give the Texas

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Department of Health, who is the agency responsible for food safety, the authority to detain and under certain circumstances even destroy food that is considered adulterated or misbranded. Chapter 431 and the regulations promulgated from this law are specific to food and drug safety and would be used at the discretion of the food safety program responding to disaster situations. FDA (2002, p. 379) was quoted earlier (Food in Disasters) that one of the objectives during a disaster is "...to effectively remove foods from commerce." The laws and regulations that govern the removal of food in commerce would not normally be listed in the State's Basic Plan due to the specificity of the language. These regulations are more appropriately located in the standard operating procedures since only one or two programs throughout the state use them. Therefore, laws and regulations delineating a program's authority should be specified in the operating procedures for food safety emergency response.

Roles and Responsibilities [6]

One of the first steps in the implementation of an emergency response is the mobilization of personnel and resources (Kreps 1991, p. 51). Yet, this function can be a major challenge during disasters (Mileti 1999, p. 223). It is critical that a command structure be planned and in place before an emergency (FEMA 1996, p. 5-A-3) and that all members of the response structure be identified (Kreps 1991, p. 51). Due to the nature of disasters and

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6 While components of roles and responsibilities, communication and coordination, and familiarity are placed as separate categories, the issues surrounding are hard to separate when talking about an emergency response plan that will work well in the event of disaster. If even one of these components is missing, the others will seldom function properly. The components are discussed separately here, however, any of the supporting documentation mentioned for the three components could just as easily be used to support another.

the response to them, many organizations are involved.   Members of working units may come from the same organization. But it just as likely working units will be comprised of employees from several agencies.   One contact person should be identified for each organization represented. Once the organizations and members of work groups are identified, the duties of each should be clearly delineated (FEMA 1996, p. 4-4).

A major issue in emergency management is effective coordination at every level within the response structure (Hightower and Coutu 1996, p. 78). Conflicts during disasters arise over organizational domains and jurisdictional differences (Quarantelli 1997, p. 46). Whenever there are overlapping duties between organizations or work units, the plan should specify which organization has the lead role (FEMA 1996, p. 4-4). The state's basic plan and even the functional annexes generally provide organization structures and delineation of duties. This is, however, on a very broad statewide scale. For instance, the Texas State Emergency Operations Plan identifies and describes the responsibilities for the Governor, State Director, State Coordinator, etc. (State of Texas Emergency Response Management Plan 1998, p.19-20). This information, while critical at the state level, will not assist team members in a food program to complete the duties in their area of responsibility. For example, a program may have positions such as Division Director, Assistant Director, Headquarters Program Managers, Field Supervisors, Team Leaders, Investigators, etc, each with different responsibilities. Detailed organization structures and duties directly related to the program must be included in the operating procedures for food safety emergency response.

Communication and Coordination

> …the differing philosophies, priorities, and perceptions of others have created conflict and competition, making it evermore difficult for them to collect, maintain, and organize the people and resources needed to perform emergency management. Today emergency managers must be masters of anticipatory thinking, exhibit leadership, and exercise artful powers of persuasion in order to overcome incessant turf wars among public agencies and officials. (Sylves and Waugh 1996, p. xiii)

Two issues emerge from the literature on communication and coordination. The first issue involves communication with the work unit and parent agency. According to Schneider, bureaucracies tend to rely on existing reporting structures during disasters. When communication structures break down "public officials can not receive and follow directions from their superiors or give instruction to their subordinates" (1995 p.60). Field personnel, therefore, end up spending their time trying to establish communication in order to get instructions rather than doing the work that needs to be done (Schneider 1995, p.60). In addition, during disaster situations normal reporting structures may be altered as people and positions are moved to around to accommodate emergency duties (Quarantelli, 1997, p.46). State plans address communication at the agency level but do not provide direction to personnel at the program levels. Intra-agency communication should be included in standard operating procedures for state food safety emergency response.

Secondly, organizations guard their territory and interests very carefully and resist any attempts on infringement (Mileti 1999, p. 223). Communication is crucial

between responding organizations and any problems with information flow can lead to rifts in the response structure (Quarantelli 1997, p. 45). During disasters, organizations cannot function in isolation. Many of the duties require interaction with other groups (Hightower and Coutu, 1996, p. 86). And as previously stated (Roles and Responsibilities), many duties fall within more than one organization or work group. For any emergency response plan to function, all organizations must have full understanding of the roles and responsibilities, how these groups will coordinate during a disaster, and the channels for communication before the event occurs (Pan American Health Organization 2000, p. 19; Hoetmer, 1991, p. xx).

Kreps (1991, p. 52) recommends that formal and informal agreements be developed during the planning stages. Discussions prior to an event will help build trust between agencies, and lead to better coordination. Earlier it was mentioned that the state's role is to liaison between local organizations and the federal government; assist locals in response; and certain state agencies provide front line response in emergencies (for example food programs). It is extremely important for these three levels of government to keep communication and coordination flowing in disasters (Clinton et al, 1995). While it is entirely feasible that the state plan may address some of these agreements, it unlikely that program level employees would have knowledge of the specifics. Interagency communication and coordination should be included in standard operating procedures for food safety emergency response even if only to reference a document and summarize the details.

Resources

FEMA (1996, p. 2-11) notes that the preliminary step to building an Emergency Operations Plan involves a needs assessment. During the process of creating the EOP, the planning team determines the resources needed to address potential hazards likely to occur in a jurisdiction. The Pan American Health Organization asserts that programs "should adopt measures to ensure that financial and other resources are available for increased readiness and can be mobilized in disaster situations." FEMA and Clinton et al mention in passing a few of the specific resources a response team may need during a disaster, such as radios, maps, demographic information, etc. (1996, p. 1-7; 1995). FEMA, however, generally refers to resources in broad categories such as, "personnel, equipment, facilities, supplies, and other resources…" (1996, p. 1-1). Hightower and Coutu (1996, p. 90) bring up the issue of the importance of communication resources such as phone lines, radio, etc.

This research focuses on the operating procedures of the front line work groups (food safety programs); therefore, it is not enough to have a procedure with broad categories. A list of desired minimum resources for each category should be included in the model. More detail will be added to this category following the document analysis of written state food program procedures. While the literature does not specifically indicate how important resources are or what problems can occur in response if there is not adequate personnel or equipment, it seems logical that this would be a critical component of operating procedures. Therefore, resources should be included in the operating procedures for food safety emergency response.

Familiarity

Kreps (1991, p. 34) believes that "for a plan to work those involved must be familiar with it." Familiarity comes through planning, training, and maintenance of the plan. Knowledge and understanding of an emergency response plan begins at the planning stage. FEMA (1996, p. 2-2) lists three reasons why team members should be included in the planning stage: 1) when members have input into drawing up a set of procedures they are more likely to follow them during the disaster; 2) the knowledge and experience of the work unit is included in the design; and 3) relationships form during the development process which sets the stage for a more coordinated response in an emergency. Well-developed plans need to be practiced if they are to work in a real-life event (Pan American Health Organization 2000, p. 19). Training provides an opportunity for personnel to practice and become familiar with their assigned tasks (FEMA 1996, p. 2-2). Finally, Kreps indicates that once a plan is written, the job is not over. Plans must be reviewed and updated (Kreps 1991, p. 34). He recommends that plans be reviewed through designated meetings with selected personnel. This aids in keeping personnel familiar with the plan, allows for updates in personnel and resources, and allows important interaction between the members of the response team (Kreps 1991, p. 52). As the success of a plan may hinge on team members' familiarity with their tasks and other team members, this component should be included in the operating procedures for food safety emergency response.

Summary of Preliminary Conceptual Framework

The ideal type categories developed from the literature include all hazard approach,

definition of disaster, authority, roles and responsibilities, communication and coordination,

resources, and familiarity. Table 2.3 provides a summary of the categories and the

corresponding literature associated with each category.

Table 2.3 Preliminary Conceptual Framework

Essential Components	Literature
All Hazard Approach • Standard Operating Procedures should address an all hazard approach	FEMA 1996 Sylves 1996 Quarantelli 1997 Crichlow 1997
Definitions of Disaster	Hoetmer 1991 Quarantelli 1997
Authority • Laws • Regulations	FEMA 1996 FDA 2002
Roles and Responsibilities • Organizational Structure • Delineation of Duties	Kreps 1991 FEMA 1996 Quarantelli 1997 Mileti 1999
Communication and Coordination •Inter and intra-agency lines of communication •Coordination agreements between organizations	Kreps 1991 Hightower and Coutu Clinton Hagebeck, Sirmons, and Brennan 1995 FEMA 1996 Sylves and Waugh 1996 Quarantelli 1997 Mileti 1999 Pan American Health Organization 2000
Resources • Personnel • Equipment/Supplies • Checklists	Hightower and Coutu 1991 Clinton Hagebeck, Sirmons, and Brennan 1995 FEMA 1996 Pan American Health Organization 2000
Familiarity • Planning • Training • Review	Kreps 1991 Clinton, Hagebeck, Simmons, and Brennan 1995 FEMA 1996 Pan American Health Organization 2000

Conclusion

This chapter explored the literature on problems, history, and important components of emergency management. This paper uses an iterative process to produce a guide for developing standard operating procedures. The first iteration involved linking the larger emergency management literature to the seemingly appropriate categories of All Hazard Approach, Definitions of Disaster, Authority, Roles and Responsibilities, Communication and Coordination, Resources, and Familiarity. The next stage links the categories to the world of practice.

Food safety programs across the country were contacted to obtain any written procedures that were already in use. These plans are useful in verifying information already gleaned from the literature and may even provide new insights on critical elements that need to be included in a standard operating procedure. The following chapter provides a review of the methods used for data collection. This data is used to create a more comprehensive conceptual framework to use as a departure point for further inquiry.

Chapter Three Methodology

Purpose

This chapter describes the methodology used to produce a framework states can use to develop unique standard operating procedures for food safety emergency response. Document analysis and telephone interviews were used to collect evidence to support the model. An explanation of these methods and how they are linked to the preliminary framework is included in this chapter.

Population

Over fifty state agencies have jurisdiction for the safety of the food supply. Fifty state food safety programs were contacted via letter to ascertain whether the program has any written procedures for responding to food safety emergencies. Personnel from twenty-four states responded either by email, phone, or mail. Nine responded that the program did not have any written procedures. Seven of the fifteen documents submitted were applicable[7] to the narrow subject matter of standard operating procedures for food safety emergency response and were used for the document analysis. This information in summarized in Table 3.1.

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[7] The other eight states did send a document. These documents were either plans at the state or agency level with no specific reference to the food program or they were simply instructions on how to handle food products in specific disasters. In the latter case, the documents provided no guidance for staff on how to respond in an emergency. These documents, therefore, were not included in the document analysis. It is not known if the programs do not have any procedures specific to the program.

Table 3.1 Response Summary for Request for Information from State Food Safety Programs

States Contacted	50
Total Number of States that Replied	24
States with no plans	9
States that sent applicable documents	7
States that sent documents that were outside the scope of the research	8

Data Collection Methods

The mode of observation for this research is document analysis and focused interview. Document analysis was used to corroborate categories developed from the literature review and provide additional categories. Interviews were used to investigate any differences between the categories developed in the literature and those found during document analysis. According to Robert Yin (1994, p. 81), "Documents can provide other specific details to corroborate information from other sources. If documentary evidence is contradictory rather than corroboratory, the case study investigator has specific reason to inquire further into the topic."

Document Analysis

The documents used in this research were obtained via a letter request to fifty state food programs. Of the fifty letters sent, twenty-four responded either by email, phone, or mail. Nine of documents received were determined to be applicable to the narrow subject matter of standard operating procedures for food safety emergency response. The documents were reviewed for corroboratory evidence and the information used to complete the

conceptual framework. One weakness of this document analysis lies in the availability of these documents. The state emergency response plans are internal documents and are not generally available to the general public. In addition, many are still in draft form.

Interviews

Focused interviews were used to validate the applicability of the information used to build the categories that make up the model standard operating procedures. Two groups of interviews were conducted. The first set involved interviews with State Food Safety Directors or designees from states that submitted written plans to clear up inconsistencies between the literature and the food safety emergency response plans currently being used. In one case, the selected interviewee was extremely busy and asked to respond by email. While the questions were not pre-established, the conceptual framework developed from the literature review and document analysis was used as a point of departure during the interview. The state representatives interviewed were asked their opinions on the importance of categories and any components within the categories that were found in the literature and in other state plans, but that are not included in their own state's plan.   Yin (1994, p. 85) notes that a weakness of interview is "they are subject to common problems of bias, poor recall, and poor or inaccurate articulation." Information obtained during these interviews, when at all possible, was corroborated with other sources such as the literature, document analysis, or the second set of interviews.

The document analysis and first set of interviews are based on internal state documents. The documents were reviewed for content and representatives from these states

were asked direct questions on components of the documents. While these documents may

not necessarily be considered "confidential", as government documents are generally open to

the public, there is concern that terrorist groups may use documents of this type to their

advantage. In addition, the intent of the research was not to criticize documents currently

being used by states for emergency response. The questions, however, were directly related

to components that were missing from specific documents, possibly causing states to be less

willing to share documents for student research in the future. Therefore, the states that were

included in the document analysis and first set of interviews are identified as State A, State

B, etc. Table 3.2 below provides the state identifier and the general location of the state.

Table 3.2 Identification of States

State Identifier	State	Method of Analysis
State A	Eastern State	Document Analysis and Interview
State B	East Coast State	Document Analysis and Interview
State C	East Coast State	Document Analysis and Interview
State D	Central State	Document Analysis and Interview
State E	Western State	Document Analysis
State F	Western State	Document Analysis and Interview
State G	Southern State	Document Analysis

The second set of interviews was with Food Safety Directors or their designees after

they had an opportunity to review the model standard operating procedures developed from

the conceptual framework. The interview began with three basic questions; 1) Are there any

elements missing that you feel should be included? 2) Are there any elements you feel should

not be included? 3) Do you have any comments on how this document could be improved?

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The remainder of the interview consisted of follow-up questions for clarification and elaborations on any comments made by the interviewee. In one case, schedules for the interview could not be coordinated and the interviewee responded by email. In his book, *The Practice of Social Research,* Earl Babbie (1998 p. 291) mentions, "…one of the strengths of field research is its flexibility in the field. The answers evoked by your initial questions should shape your subsequent one."

Four of the five interviewees were not part of the first round of interviews. One of the interviewees from the first round was extremely interested in the final product and agreed to a second interview. Using two sets of interview pools allowed for a corroboratory source of information.

Table 3.3 shows how the categories are supported by the document analysis and then pinpointed for further inquiry through interviews.

The following chapter provides a review of the data collected from the document analysis and the preliminary interviews.

Table 3.3 Operationalizing the Conceptual Framework: Tying the Preliminary Framework to the Evidence Collected

Ideal Type Categories	Research Methods	Evidence
Type of Plan Plan should reflect an all hazard approach.	Document Analysis	Plan describes either direct statement or design that the plan uses an all hazard approach
Definition of Disaster	Document Analysis Interview	Plan specifically defines stages or disaster response or specifically designates who will make the decision when emergency response is initiated.
Authority (Identification of Laws and Regulations)	Document Analysis Interview	Plan specifically states laws and regulations applicable to a food safety emergency.
Roles and Responsibilities • Organizational Structure • Delineation of Duties	Document Analysis Interview	Plan contains an organizational structure and explanation of the roles of positions in the structure
Communication and Coordination • Inter agency lines of communication • Intra agency lines of communication • Coordination agreements between organizations	Document Analysis Interview	Plan discusses communications within the agency and with other agencies Plan discusses agreements with other organizations
Resources • Personnel • Equipment/Supplies	Document Analysis Interview	Plan discusses use of personnel Plan provides equipment list
Familiarity • Planning • Training • Review	Document Analysis Interview	Plan discusses planning mechanisms (team) Plan discusses training Plan stipulates periodic plan review and/or debriefings after disasters

Chapter 4 Settings

The emergency response literature does not delve into the specifics of how individual programs should develop internal procedures for responding to emergencies.   The literature does recommend, however, that programs have these procedures (FEMA, 1996 p. 1-7). The purpose of this chapter is to refine the categories for food safety emergency response standard operating procedures (SOPs). The conceptual framework developed from the broad emergency response literature is used as a starting point for further refinement based on the concepts found in existing state food safety program SOPs. This chapter reports the findings following the document analysis of seven state documents and five interviews with state food safety program personnel. Summaries of the document analysis and interviews are found in Tables 4.1 and 4.2, respectively.

All Hazard Approach

The literature recommends emergency response planning take an all hazard approach. It stands to reason that this concept should continue when developing procedures used to implement these plans.   This concept, therefore, is included as a category in the preliminary conceptual framework. The document analysis supports the inclusion of this category in standard operating procedures (SOPs). Six of the seven documents reviewed reflected an all hazard approach. One document did not refer in any way to the type of disasters the procedures addressed. Another element was also discovered during the document review. Four of the seven documents included a scope or purpose at the beginning the document that

summarizes what the procedures are intended to accomplish. For example, "These

procedures provide emergency response staff with a framework to guide them in

communication, coordination, and decision making activities in order to respond to an

emergency and return the food industry and community to normal operations as quickly and

efficiently as possible."[8] "Scope" or "purpose" was therefore added as an element of the all

hazard approach category. This category was not discussed during any of the preliminary

interviews as the literature and the state documents reviewed during the document analysis

supported inclusion in the standard operating procedures.

Definitions of Disaster

Hoetmer explains that when definitions for disaster levels are established, programs

responsible for emergency response know ahead of time what situations trigger response

activities (1991, p.viii). The document analysis supports the inclusion of this category in the

final model and provides additional elements to the category. In fact, the analysis points to

splitting the category into two elements. First, three of the seven documents defined, at least

in some form, stages of disaster that determine the level and type of response from the state

food safety program.   For example, State C breaks emergencies in two levels, limited and

major. Instructions to personnel are provided for each level. Exploration of this category

during interviews provided further support for this element. Representatives from two of the

four states (States B and D) that did not include this element in their procedures were

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[8] This example was created from a combination of scope and purpose statements from several state documents.
While this author created the example, credit should be given to the states of Massachusetts, Florida, Virginia, and
Wisconsin for the ideas.

interviewed and asked their opinion. While State B does not have this element in their written procedures, the interview process revealed the program actually does have stages for implementation of their procedures. For example, in smaller emergencies the procedures are implemented out of the program office, whereas in larger disasters, procedures are implemented out of the state emergency operations center. Second, in five of the seven documents, the activation process for the procedures is described. For instance, in localized emergencies, local supervisors assess the appropriate response (State C). In another example, regardless of the type or scale of the emergency, the program director makes the decision on the appropriate response (State F). The ideal category, definitions of disaster, is supported by the literature and document analysis. The documents provide further refinement of this category with the addition of two elements; 1) define stages of disaster to determine response levels and 2) define how and when standard operating procedures are activated.

Authority

Understanding the "extent and limits" of authority is an important tool for emergency response personnel (FEMA 1996, p. 4-16). Yet, only two of the seven documents reviewed included any references to the laws and regulations that give their personnel authority to take action during emergency situations. During the interviews, representatives from two of the states maintained that their employees knew their jobs and were aware of the laws and regulations (State D and State F). One interviewee asserted that including all the laws and regulations would make the document too cumbersome (State F). Another, however, did add

that referencing the laws and regulations in the document would be a "good idea" (State D). Finally, a third indicated the draft used in this document analysis had since been updated and laws and regulations are now referenced in the document (State B). Based on the information obtained during the interviews, the Authority section remains in the conceptual framework with the clarification of referencing laws and regulations. A modification to the Resources category includes a recommendation to include copies of the laws and regulations in the equipment element.

Roles and Responsibilities

A major challenge during disasters is the mobilization of personnel and resources (Mileti 1999, p.223). The focus during an emergency should be on activities that will bring the community back to normal as quickly as possible. Explicit details of the command structure and details about the duties for each member of the team help to avoid conflicts among the responders during the response. The document analysis supports the inclusion of the organizational structure and delineation of duties elements of this category in the model standard operating procedures. Five of the seven documents reviewed include organizational charts and delineation of duties. While two of these five provide detailed information only on the duties of management, three of five are more specific down to the level of field personnel. A representative from State B, whose plan included delineation of duties only for management, agreed it might be a good idea to include some definition of the field duties if the roles are not too rigid. The roles during an emergency must be flexible. There is support in the literature for flexibility. According to Kreps (1991, p. 34), "preparedness and

improvisation are foundations of emergency management." The element of delineation of duties remains in the category, but the flexibility reference was added.

Communication and Coordination

Personnel responding to disasters must have a full understanding of how to communicate and coordinate with others not only within their work group but with other groups inside and outside their agency in order for the response to function effectively (Pan American Health Organization 2000, p.19). Communication before and during the disaster is crucial. The inclusion of this category and the elements of inter and intra-agency lines of communication are supported by the document analysis. Five of the seven documents addressed intra-agency communication. Four out of five addressed inter-agency communication.

The element of coordination is more difficult to assess. There are references to other agencies in five of the seven documents. What is unclear is if all parties are familiar with the information placed in these plans. For instance, one of the documents specifically states that these procedures are to be supplied to all local health departments and that local department procedures must be consistent with the state procedures (State A). This ensures that all parties are aware of their roles in the process and how each group plays a role in the response. In another document, a written agreement with the U.S. Food and Drug Administration is attached. During the interviews, representatives from four of the five states confirmed their agencies do have agreements such as memorandums of understanding, contracts, or the overall state plan details the roles of the state and local governments in

emergency response. As communication and coordination is essential at the response level, it seems evident that these documents should at a minimum be referenced and summarized in the standard operating procedures so that all members of the response team are aware of any agreements made. This will help reduce confusion during a time when even the slightest breakdown in communication can lead to "duplication of effort, omission of essential tasks, and even counter productive activity" (Auf der Heide 1989).

Resources

The literature references resources in broad terms. For example, FEMA states, "identify personnel, equipment, facilities, supplies, and other resources" (1996, p.1-1). The document analysis supports the inclusion of this category and also provides a rich resource on the refinement of this category. Six of the seven documents included sections on at least one of the three elements listed in the preliminary conceptual framework of personnel, equipment and supplies. The documents also provide several resources not mentioned in the general literature that may be critical for responding to food emergencies. These additional resources were added to the conceptual framework without corroboration from the literature and include:

- contact information for Support Agencies, Industry Associations, and Major industry in the area
- pre-established priority list of field work by hazard
- decision making guidelines for dealing with damaged food and food facilities
- listing of industry inventory
- listing of available landfills

When one of these elements was not included in a specific state's procedures, it was discussed during the interview. The results of the interviews indicate that all of these elements are important. The general response was that the program had this information in the form of general knowledge among the staff or in other documents, but that it would be a "good idea" (State B) to put the information together in a written form or at least reference the documents in the procedures. Two respondents suggested that the issue of a landfill inventory was redundant and did not need to be included as there was a program or other state agency that could be consulted during an event. At this point the element of landfill inventory will be included in the conceptual framework and further investigated during the final interviews.[9] Therefore all the additional elements gleaned during the document analysis were added to the conceptual framework.

Familiarity

The success of an emergency response may hinge on team members' familiarity with the procedures. Familiarity comes through planning, training, and maintenance. Only State B included all three elements of this category in their written procedures. Another included a reference to plan review (State F). During the interviews, representatives from four states that did not have these elements in their procedures indicated that there was a mechanism for

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[9] A model document of the type does not exist currently. I will include any ideas gleaned from documents currently in use at the state food safety programs regardless of support in the literature unless the there is a compelling reason not to. The final model document will be a tool for states to use in the creation or review of their own procedures. At that time they can decide whether an element ultimately belongs in their procedures. At a minimum the document created here will get them to think about the usefulness of an element and create dialogue. The important issue here is that these concepts are given consideration. The general sense I am receiving from the preliminary interviews is that all of these concepts are important to think about before disaster strikes.

at least reviewing and updating the plan. Three representatives mentioned there are agency personnel responsible for ensuring that all agency procedures are kept up to date. One state actually has yearly training on emergency response procedures (State C). According to Auf der Heide, simply having a written plan can be "an illusion of preparedness" (1999). While the category was not evident in the written plans, it remains an important concept. The interviews corroborate this assertion and therefore, the category remains in the conceptual framework.

Table 4.1 provides a results summary of the document analysis. The table shows how each state document compared to the preliminary conceptual framework categories and elements. The table also includes additional elements that were discovered during the document analysis.   Table 4.2 provides a results summary of the preliminary interviews.

Table 4.1 Summary of Document Analysis: Comparing each State Procedure to the Preliminary Conceptual Framework

Essential Components	State A	State B	State C	State D	State E	State F	State G
All Hazard Approach • Standard Operating Procedures should address an all hazard approach *Additional Element* *• Purpose or Scope*	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Definitions of Disaster Additional Elements *•Defines stages of disaster to determine response levels* *• Defines how and when standard operating procedures are activated*	Yes Partial Yes	Partial Partial Yes	Yes Yes Yes	Partial No Yes	No No No	Partial No Yes	No No No
Authority • Laws • Regulations	Yes	No	No	No	Yes	No	No
Responsibilities • Organizational Structure • Delineation of Duties	Yes Yes	Yes Partial	Yes Yes	Yes Yes	No No	Yes Partial	No No
Communication and Coordination •Inter-agency lines of communication •Intra-agency lines of communication •Coordination agreements between organizations Additional elements *•Includes agreements with agencies that have overlapping duties with*	Yes Yes Yes Yes	Partial Partial No No	No Yes No No	Yes Yes Partial No	No No Partial No	Partial Yes Partial No	No No Yes Yes

Essential Components	State A	State B	State C	State D	State E	State F	State G
program • *Includes coordination with agency responsible for waste disposal*	No	No	No	No	No	No	No
Resources • Personnel • Equipment/Supplies	Yes Yes	Yes Yes	No No	Yes Yes	No No	Yes Yes	No No
Additional elements • *Contact Information for Support Agencies, Industry Associations, and Major industry in area*	Partial	Yes	No	Yes	No	Yes	No
• *Pre-established Priority list of fieldwork by hazard*	Yes	No	Yes	No	Yes	Yes	No
• *Decision making guidelines for dealing with damaged food and food facilities*	Yes	No	Yes	No	Yes	Yes	No
•*Listing of industry inventory*	No	No	Yes	No	No	No	No
•*Listing of available landfills*	No	No	No	No	No	No	No
Familiarity • Planning • Training • Review	No	Yes Yes Yes	No	No	No	No No Partial	No

Table 4.2 Preliminary Interview Results

Essential Components	State A	State B	State C	State D	State F
All Hazard Approach • Standard Operating Procedures should address an all hazard approach *Additional Element* • *Purpose or Scope*	Not included in interviews as all procedures reviewed addressed all hazard approach.				

Definitions of Disaster Additional Elements •*Defines stages of disaster to determine response levels* • *Defines how and when standard operating procedures are activated*	Included in procedures	Supports	Included	Unclear Supports	Does not support
Authority • Laws • Regulations	Included in procedures	Supports	Somewhat Supports	Somewhat Supports	Does not support
Responsibilities • Organizational Structure • Delineation of Duties	Included in procedures	Somewhat supports with refinements	Included	Included	Does not support
Communication and Coordination •Inter-agency lines of communication •Intra-agency lines of communication •Coordination agreements between organizations Additional elements •*Includes agreements with agencies that have overlapping duties with program* • *Includes coordination with agency responsible for waste disposal*	Included in procedures	Supports Already Included Supports Supports	Somewhat supports Included Somewhat Supports Somewhat supports Somewhat supports	Included Somewhat supports Somewhat supports Supports	

Resources • Personnel • Equipment/Supplies	Included Included	Supports with refinements	Unclear 	Included Supports	Included Included
Additional elements • Contact Information for Support Agencies, Industry Associations, and Major industry in area	Included	Included	Supports	Included	Included
• Pre-established Priority list of fieldwork by hazard	Included	Supports	Included	Supports	Included
• Decision making guidelines for dealing with damaged food and food facilities	Included	Supports	Included	Supports	Included
•Listing of industry inventory •Listing of available landfills	Supports Supports	Supports Supports	Included Supports somewhat	Supports Supports	Does not support
Familiarity • Planning • Training • Review	Supports	Included	Supports	Supports	Supports

The Model Document

Table 4.3 provides a summary of the conceptual framework developed from the literature review, document analysis of pertinent state documents, and interviews with state food safety personnel. This framework was used to develop a document state programs can use as a tool to develop or review their own procedures. Questions or statements are used to direct the development of unique state standard operating procedures. Table 4.3 summarizes the questions or statements that were developed under each category.   The document was sent to 5 states programs for review. The results of this review are provided in the next chapter. The preliminary document is available in Appendix A.

Table 4.3 Finalized Conceptual Framework

Ideal Type Categories	Evidence	Questions/Considerations
All Hazard Approach[1] • Standard operating procedures should address an all hazard approach • Purpose or Scope	Document Analysis Document Analysis	Can this plan be used in the event of any disaster? What is to be accomplished by these procedures?
Definition of Disaster • Defines stages of disaster to determine response levels • Defines who determines the emergency plan will be implemented	Document Analysis/Interview Document Analysis/Interview	What does your program consider a disaster? How and when are the procedures to be activated?
Authority • Laws • Regulations	Document Analysis/Interview	What are the laws and regulations that give the authority to inspect, detain, and destroy?
Responsibilities • Organizational Structure • Delineation of Duties	Document Analysis Document Analysis/Interview	Does your program have an emergency response organizational chart? For each block in the program organizational chart, identify the roles and responsibilities for each type of position

Communication and Coordination
 • Intra agency lines of communication
 • Inter agency lines of communication
 	
 • Coordination agreements between organizations
    o Several agencies have overlapping duties (i.e. local, state, and federal agencies may all have some responsibilities for food facilities)
    o Coordination with agency responsible for waste disposal (in the event of large amounts of food products destroyed)
	Document Analysis/Interview
	 Document Analysis/Interview
	
	 Document Analysis/Interview
		How do communication lines flow?
		 How does your staff communicate across agency lines?
		 Does your agency have verbal or written agreements with other local, state, or federal agencies?
		 Agencies that you may want to consider including in this section are…..

Resources • Personnel	Document Analysis/Interview	Do you have a list of all food safety

Ideal Type Categories	Evidence	Questions/Considerations
		personnel available in each area of your state with up to date names and contact information?
• Equipment List		Does your state have a list of equipment each investigator is expected to have available in the event of an emergency?
• Contact Information for Support Agencies, Industry Associations, and Major industry in area		Does your program have a list developed of contact information for Support Agencies, Industry Associations, and Major Industry in each area of your state?
• Priority list of fieldwork by hazard pre-established		Does your program have a priority list for field staff to use to guide them in their activities in the field?
• Decision making guidelines for dealing with damaged food and food facilities		Does your program have guidelines for dealing with damaged food and food facilities?
• Listing of industry inventory		Has your program considered providing either each investigator or the head of the local response team disks or hard copies of the industry inventory in areas of your state?
• Listing of available landfills		Does your program have a list of local landfills that accept food waste?
Familiarity[2] • Planning[3] • Training • Review ○ To update information on a periodic basis	Document Analysis/Interview	See note 3 below table. Hold a meeting or training at least once a year to review the procedures Establish a time each year to update the procedures.

[1] This category is named "Introduction" in the document sent to the state programs and in the final document.

[2] This category is named "Planning and Maintenance of Procedures." in the final document.

[3] This element was not included in the draft document by mistake. During the second round of interviews, one state representative brought planning up as one of the elements they felt was missing from the document. Due to this comment the element appears in the final document.

Chapter 5 Results

The purpose of this chapter is to report the results from five interviews[10] with state

food safety personnel. Chapter four finalized the conceptual framework on ideal categories

for standard operating procedures for food safety emergency response, which was then used

to create a preliminary document. This document can be found in Appendix A.

Representatives from five state food safety programs (Massachusetts, Michigan, Oregon,

Texas, and Virginia) were provided this document for review. They were asked to consider

three basic questions regarding the document; 1) Are there any elements missing that you

feel should be included? 2) Are there any elements you feel should not be included? 3) Do

you have any comments on how this document could be improved? The remainder of each

interview consisted of follow-up questions for clarification and elaborations on any

comments made by the interviewees. The literature and corroboration between the

interviewees were used to support any responses that brought out new concepts or suggested

refinements to the document.   During the interviews elements were not discussed unless the

interviewee had specific comments.

All Hazard Approach (Introduction)

Representatives from Michigan and Virginia recommended refinements to this

category. Both noted the concept of All-Hazard had not been sufficiently brought out in the

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[10] One of the intended interviewees had to respond via email. Our schedules were such that we were never able to
touch base over the phone, though several attempts were made to do so.

wording of the document. A very pertinent comment was made that from a food security

standpoint events that may seem at the time not to reach to disaster status could very quickly

evolve into one. "Do not limit the use of this document by excluding everyday occurrences"

(Saunders 2003). While some of the literature cautions against lumping every day

occurrences into disaster planning, Auf de Heide points out that there are several benefits to

using disaster procedures for routine emergencies. First, it gives staff the opportunity to

become familiar with the procedures. Second, it may help actual emergency response

activities flow more efficiently (1989). Several other minor comments were regarding

wording. A comparison of the wording from the initial draft and the final draft after

modifications is provided in Table 5.1 below.

Table 5.1 Comparison of the "Introduction" Between Preliminary and Final Document

Preliminary Document	Final Document
Can this plan be used in the event of any disaster? Determine what activities fall within the scope of these procedures and describe them in this section. For example, "These procedures are appropriate for responding to any disaster or emergency encountered by this program. Disasters include, but are not limited to…. Even though certain events, such as truck wrecks and fires, may be emergencies, they do not normally escalate to disaster status. Wrecks and fires can usually be handled by local field investigators without activation of these procedures."	Can this plan be used in the event of any disaster? Determine what activities fall within the scope of these procedures and describe them in this section. ***Consider making the procedures general so they may be used in any disaster situation or assist in transitioning from a routine event to a disaster. If certain situations need more specific instructions, provide an appendix document. For example, during a response your program may have very pointed instructions for how to deal with situations when bioterrorism is suspected that deviate from other emergency response procedures. These instructions could be provided in an appendix to the general procedures.***
What is to be accomplished by these procedures? For example, " These procedures provide emergency response staff with a framework to guide them in communication, coordination, and decision making activities in order to respond to an emergency and return to normal operations as efficiently as possible."	What is to be accomplished by these procedures? For example, " These procedures provide emergency response staff with a framework to guide them in communication, coordination, and decision making activities in order to respond to an emergency and return ***the food industry and the community*** to normal operations as ***quickly and*** efficiently as possible."

Definitions of Disaster

Representatives from Michigan and Virginia recommended refinements to elements within this category. Michigan suggested that foodborne illness outbreaks be included in the list of potential events that may require different levels of response. Response structures involving a localized foodborne illness (FBI) event may be quite different from a FBI outbreak involving several states. (Wojtala and Beerbower 2003) Representatives from Virginia and Texas both made comments on how important it is for staff to know how procedures are activated and what action should follow. While no specific changes were recommended, the interviewee from Virginia mentioned that empowering the staff to take action even when communication is not possible should be stressed. Programs should give thought to contingencies for communication problems such as local gathering points and even guidance for staff in the event gathering points are not available. When communications are down and gathering points are not accessible, the responders should be able to start their duties as soon as it is safe to do so (Saunders 2003). A comparison of the wording from the initial draft and the final draft after modifications is provided in Table 5.2 below.

Table 5.2 Comparison of the "Definitions of Disaster" Between Preliminary and Final Document

Preliminary Document	Final Document
What does your program consider a disaster? The recommendation is that these procedures be activated for situations that disrupt daily activities or would require escalated resources such as a flood, tornado, hurricane, earthquake, or other unanticipated event such as terrorism. While truck wrecks and fires are not normal daily activities, in most cases the events can be handled without	What does your program consider a disaster? The recommendation is that these procedures be activated for situations that disrupt daily activities or would require escalated resources such as a flood, tornado, hurricane, earthquake, or other unanticipated event such as terrorism.

Preliminary Document	Final Document
disruption to other activities and would not necessarily be considered a disaster.	
Has your program established escalated response levels?	Has your program established escalated response levels?
How would your program handle an event where communication could not be established between field offices and headquarters?	How would your program handle these events where communication could not be established between field offices and headquarters?
Review the decisions you made regarding levels of disaster. In each one of these cases, establish how and when are the procedures are to be activated.	Review the decisions you made regarding *disaster definitions* (Section 2.1). In each one of these cases, establish how and when the procedures are to be activated.
Consider an event where communication between headquarters and the emergency response staff in the area of the disaster cannot be established.	Consider an event where communication between headquarters and the emergency response staff in the area of the disaster cannot be established. *Do you have pre-established local gathering points?* *Consider providing staff instructions on activation of plan when neither of these options are feasible. Are there certain events (from those listed in Section 2.1) where staff could begin work until communication can be established? This may be essential in the event a disaster damages local and regional gathering points.*

Authority

Representatives from Michigan had a substantive recommendation for this section. Michigan recommended an element be added for powers that may be suspended or expanded once a Governor has declared a state of emergency following a disaster situation.   The only other comment was in terminology to make a statement more easily understood.   A comparison of the wording from the initial draft and the final draft after modifications is provided in Table 5.3 below.

Table 5.3 Comparison of the "Definitions of Disaster" Between Preliminary and Final Document

Preliminary Document	Final Document
What are the laws and regulations that give the authority to inspect, detain (also known as stop sale, retain, embargo), destroy, and sample?	What are the laws and regulations that give the authority to inspect, detain (also known as stop sale, retain, embargo, *seize, etc*.), destroy, and sample?
Do you have laws or regulations that give staff additional authorities during disaster situations?	Do you have laws or regulations that give staff additional authorities during disaster situations? *Does a declaration of a State of Emergency by your State Governor suspend or expand any powers?*

Roles and Responsibilities

Four of the five state representatives interviewed recommended significant additions

to this section of the model.   The first and most significant change recommended by

interviewees was to consider modeling the organizational chart after the incident command

structure. [11] At a minimum, state programs should consider the roles defined in the incident

command structure when delineating what roles people will have during a disaster response.

(Wojtala and Beerbower 2003)

The incident command system (ICS) provides a unified structure for managing

disaster response. The ICS is centered at the disaster site. (FEMA 1996, p. 5-A-5) The

system operates on a command and control structure where decisions are made by one

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[11] The Incident Command Structure (ICS) was part of my research. I chose not to include discussion of this topic in my paper because I felt it lent itself more to how the state emergency response system as a whole might operate, not just a small program implementing standard operating procedures. Programs fit into the overall established state structure. I felt it was more important for programs to understand that structure than to implement a structure within a structure. I mentioned this during one of the interviews. While they understood my point, they also felt that some of the concepts, if the not the entire idea, may be useable, especially in a major disaster. Therefore, some discussion of the Incident Command Structure is included in the results section for some background on the subject. The model document will reference the ICS in order for programs to a least consider the concepts.

authority at the scene. Tasks are divided into five areas; command, operations, logistics,

planning, and finance. (Wagner 1990, p.8) Command duties involve direction and control of

the overall scene and establishing action plans for the operations area. Operations personnel

are responsible for carrying out the instructions from command and following established

action plans. (Auf der Heide 1989) Planning functions include collecting, evaluating, and

disseminating information on the disaster. (FEMA 1996, p. 5-A-5) The logistics area has

two components, service and support. The service function makes sure that response

personnel have food, lodging, and medical care. The support function ensures that the

system has facilities, supplies and support equipment (Auf de Heide 1989). The finance area

is responsible for tracking all costs associated with the disaster response effort and evaluating

financial issues associated with emergency response operations. (FEMA 1996, p. 5-A-5)

The use of the ICS concept has grown across the country. Not everyone agrees this is

the best method for emergency response management. One reason expressed is that the

system tends to be intra-agency minded and is not structured to deal with coordination with

other organizations. Coordination is critical to an effective emergency response. According

to Wagner, "ICS models are generally blind to other organizational and community plans and

authority relationships due to their strong notion of internal command operations" (1990

p.12).

The second recommendation dealt with how roles may change depending on the

severity of the emergency. For instance, staff may initially respond to a routine event or

emergency. Should the event escalate into a disaster, there may be a "reshuffling of duties"

(Wojtala and Bearbower 2003). The more time that is spent now giving thought to these

issues, the stronger the plans will be. (Lattimore 2003) The assertion is that if the procedures

are clear on how a transition takes place and the staff are aware of these procedures, less

confusion ensues and personnel are able to get on with their duties. The final

recommendation is simply that it may be important to emphasize the fact that an "emergency

response" organizational chart is not necessarily the same as the every day "business as

usual" organizational chart. The emergency chart may need to be streamlined in order to

make decision-making and communication more efficient (Lattimore 2003). A comparison

of the wording from the initial draft and the final document after modifications is provided in

Table 5.4 below.

Table 5.4 Comparison of the "Roles and Responsibilities" Between Preliminary and Final Document

Preliminary Document	Final Document
Does your program have an emergency response organizational chart? The chart should be very specific at the program level, to include all position types (EOC Coordinator, Division Director, Field Supervisor or Team Leader, Field Investigator, etc) responsible for emergency response. In addition, the chart should show the manner in which the program fits into the agency and state emergency response structure. Actual staff names and contact information can be included under section 6.1 Resources – Personnel.	Does your program have an emergency response organizational chart? The chart should be very specific at the program level, to include all position types (EOC Coordinator, Division Director, Field Supervisor or Team Leader, Field Investigator, etc) responsible for emergency response. Actual staff names and contact information can be included under section 6.1 Resources – Personnel.
What flow should the communication and authority lines follow?	What flow should the communication and authority lines follow?
If one person in the chain cannot be reached (essentially breaking the flow of communication), who is contacted next? For instance, if field personnel need assistance and their first point of contact is the Division Director, who is the contact if the Division director is not available?	If one person in the chain cannot be reached (essentially breaking the flow of communication), who is contacted next? For instance, if field personnel need assistance and their first point of contact is the Division Director, who is the contact if the Division Director cannot be reached?
	How does the program chart fit into the agency and state emergency response structure.

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Preliminary Document	Final Document
For each block in the program organizational chart clearly identify the roles and responsibilities of each position type. It is important for each member of the staff to understand their role in the process. Consider how job duties may be expanded in each level of disaster as defined in Section 2, Definitions of Disaster.	For each block in the program organizational chart, clearly identify the roles and responsibilities of each position type. It is important for each member of the staff to understand their role in the process. Consider how job duties may be expanded in each level of disaster as defined in Section 2, Definitions of Disaster. ***Review the tasks of Command, Operations, Logistics, Planning, and Finance outlined in the Incident Command System. Do you have personnel responsible for these duties? (For information on the Incident Command System see Guide for All-Hazard Emergency Operations Planning, Federal Emergency Management Agency)*** ***Consider how duties may change when a routine emergency event or non- emergency event transitions into an emergency. For instance, when an emergency situation is emerging, the personnel first on the scene may have additional duties until additional personnel can be contacted and/or mobilized.***

Communication and Coordination

Representatives from Michigan and Texas recommended significant additions to this category. One of the additions revolves around communication with the public and industry. "In a disaster, communication with the public is so critical…everybody ought to know in a statewide event, there is a spokesperson. Everyone speaking at once in a disaster situation is not good." (Lattimore 2003)   Wojtala and Beerbower recommended an element not only on communication with the public, but also with the industry. In disaster situations, many times industry can provide essential information and assistance to aid in response and recovery.

Wojtala and Beerbower also recommended that the element on intra-agency communication be clarified to include not only communication from the supervisor and headquarters but the other way as well. The field staff should feel they are to call in when assistance is needed. This concept is briefly discussed in the Roles and Responsibilities category, but due the importance, will also be reiterated here. Other comments were minor clarification issues. A comparison of the wording from the initial draft and the final document after modifications is provided in Table 5.5 below.

Table 5.5 Comparison of the "Communication and Coordination" Between Preliminary and Final Document

Preliminary Document	Final Document
How do communication lines flow in each level of emergency described in Section 2 Stages of Disaster? For instance, in the event of a state wide emergency response who initiates the contact and how does it flow to the field staff? In the event of a localized emergency where a field investigator may be the initial contact, how does communication flow back to headquarters? How does information flow from headquarters to the agency and state level?	How do communication lines flow in each level of emergency described in Section 2 Definitions of Disaster?

In the event of a state wide emergency response who initiates the contact and how does it flow to the field staff?

In the event of a localized emergency where a field investigator may be the initial contact, how does communication flow back to headquarters?

How does information flow from headquarters to the agency and state level? |
| Consider how communication should continue in the event that a breakdown in communication occurs along the reporting chain. For instance, if the communication channels are down in a local area how does the field staff communicate with their team leader or field supervisor? Is there a pre-established place to meet in the local area? Do they function with limited duties until communication can be established?   If staff can function for a time without communication, be sure to develop procedures in Section 6.4 and 6.5 that detail their priorities and provides decision-making guidelines. | Consider how communication should continue in the event that a breakdown in communication occurs along the reporting chain. For instance, if the communication channels are down in a local area how does the field staff communicate with their team leader or field supervisor? Is there a pre-established place to meet in the local area? Do they function with limited duties until communication can be established?   If staff can function for a time without communication, be sure to develop procedures in Section 6.4 and 6.5 that detail their priorities and provides decision-making guidelines. |
| Does your agency have verbal or written agreements with other local, state, or federal | Does your agency have verbal or written agreements with other local, state, or federal |

Preliminary Document	Final Document
agencies? Review the documents. Are they specific to issues of overlapping jurisdictions? For example, in an area with a local health department, does the agreement describe which facilities will be handled by the local jurisdiction and which ones your program will handle? If the overall agency agreement is specific, summarize the agreement and reference the document in this section.	agencies? Review the documents. Are they specific to issues of overlapping jurisdictions? For example, in an area with a local health department, does the agreement describe which facilities will be handled by the local jurisdiction and which ones your program will handle? If the overall agency agreement is specific, summarize the agreement and reference the document in this section.
If the overall agency agreement is not specific, use this section to delineate duties between the groups. Consider holding a meeting or conference call with the agency to work out the details.	If the overall agency agreement is not specific, use this section to delineate duties between the groups. Consider holding a meeting or conference call with the agency to work out the details.
How does your staff communicate across agency lines? Is there is a certain protocol? If so, describe the procedures here.	How does your staff communicate across agency lines? Is there is a certain protocol? If so, describe the procedures here.
Can any member of your staff contact other agencies? If so, are there certain situations or conditions that dictate when the agencies are contacted? Or, is there on person within the program who is the primary contract with those agencies. If so, that position should be listed here, and should be identified in the delineation of duties and the organizational chart.	Can any member of your staff contact other agencies? If so, are there certain situations or conditions that dictate when the agencies are contacted? Or, is there one person within the program who is the primary contact with those agencies. If so, that position should be listed here, and should be identified in the delineation of duties and the organizational chart.
	Have you considered meeting with industry associations and major industry in your state to discuss coordination during disasters. *** Have you supplied industry with copies of guidance food safety personnel use when determining the safety and condition of food following a disaster***
	Do you have emergency contact names and numbers for industry associations and major industry in the area?
Consider listing the agency contact names and telephone numbers in this section or include as a document in Section 6.2 Resources, Equipment. Agencies that you may want to consider including in this section are local health departments, other programs in your own agency, the state agency in charge in waste disposal, U.S. Food and Drug Administration, and U.S. Department of Agriculture.	Consider listing the agency contact names and telephone numbers in this section or include as a document in Section 6.2 Resources, Equipment. Agencies that you may want to consider including in this section are local health departments, other programs in your own agency, the state agency in charge in waste disposal, ***the state agency in charge of drinking water,*** U.S. Food and Drug Administration***, Centers for Disease Control,*** U.S.

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Preliminary Document	Final Document
	Department of Agriculture, *Department of Homeland Security, etc.*
	How is information disseminated to the public? Is there an established method for instance through an agency communications office? Does this change in statewide disasters? Provide this information here so staff will all know and understand how to handle dealing with the dissemination of emergency information for the public.

Resources

During two interviews, four issues came to light regarding elements in this category. One glaring omission in this category deals with contingency planning in the event a disaster causes "disruption the program's ability to respond." A specific example of this involved destruction of a local program office in Texas due to a tornado. A program should give thought to how they will function in this type of scenario. (Lattimore 2003) Another omission is planning for teams to be brought in from other areas of the state to work the disaster to aid local personnel either due to the intensity of the situation or because local personnel are themselves victims of the disaster. [12] Wojtala and Beerbower recommended the element on personnel is clarified to specify "trained personnel". A recent document produced by the Association of Food and Drug Officials entitled "Public Health Response to Emergencies Skills, Knowledge and Experience Expectations" was recommended as a possible appendix to the final document. Finally, Wojtala and Beerbower recommended industry be involved in the development of decision making guides for dealing with damaged

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[12] There is some additional support for this suggestion. When I first began this research many months ago, I had several phone conversations with state food safety personnel. Dr. John Fruin with the Florida Department of Agriculture mentioned his program does have procedures for bringing in teams from other areas of the state when the local personnel are themselves victims of the disaster.

food and food facilities at the program level or possibly at the national level. This would

involve industry in the planning phase and businesses would then be aware of what is

expected during the response and recovery phases. If industry is aware of what to expect

ahead of time, businesses and the community may recover in a more efficient manner. This

final recommendation will be included as an item to be considered by state programs with a

caveat that at a minimum these guides be shared with industry so firms know what to expect

from food safety personnel working a disaster.   A comparison of the wording from the initial

draft and the final document after modifications is provided in Table 5.6 below.

Table 5.6 Comparison of the "Resources" Between Preliminary and Final Document

Preliminary Document	Final Document
Do you have a list of all food safety personnel available in each area of your state with up to date names and contact information? Do the lists designate each person's role, first point of contact, and backup contacts?	Do you have a list of all food safety personnel available in each area of your state with up to date names and contact information? Do the lists designate each person's role, first point of contact, and backup contacts? *Assess your personnel. Are they trained in emergency response operations? Consider assigning new and untrained personnel in support positions until proper training and can be conducted.*
Does your program have a list of equipment each investigator is expected to have available in the event of an emergency? This list should include all supplies, inspectional equipment, copies of pertinent laws and regulations, forms, contact lists, a copy of the SOP document, etc.	Does your program have a list of equipment each investigator is expected to have available in the event of an emergency? This list should include all supplies, inspectional equipment, copies of pertinent laws and regulations, forms, contact lists, a copy of the SOP document, etc. *Consider where this equipment will be kept.*
Does your program have a list developed of contact information for Support Agencies (Local, State, Federal), Industry Associations, and Major Industry in each area of your state?	Does your program have a list developed of contact information for Support Agencies (Local, State, Federal), Industry Associations, and Major Industry in each area of your state? *Consider a mechanism for keeping this list*

Preliminary Document	Final Document
	current.
Does your program have a priority list for field staff to use to guide them in their activities in the field? If not, consider developing one. There may be times when communication is not possible. This list allows staff to continue the job of getting through the emergency and on the road to a faster recovery. There may be additional requirements or needs when staff is able to check in with headquarters, but until then they have pre-established guidance.	Does your program have a priority list for field staff to use to guide them in their activities in the field? If not, consider developing one. There may be times when communication is not possible. This list allows staff to continue the job of getting through the emergency and on the road to a faster recovery. There may be additional requirements or needs when staff is able to check in with headquarters, but until then they have pre-established guidance.
Does your program have guidelines for dealing with food facilities affected by disaster situations? For example, if a tornado occurs, certain produce can be salvaged and other products must be destroyed. Consider establishing your own or use documents already completed. If the information is too cumbersome to include in this document, refer to the guidance document here and make sure the document is included on the Equipment list in Section 6.2.	Does your program have guidelines for dealing with food facilities affected by disaster situations? Example: if a tornado occurs, certain produce can be salvaged and other products must be destroyed; how to handle perishable foods in power outages; *assessing foods that have been in contact flood waters; assessing foods in hurricanes and tornados.* Consider establishing your own or use documents already completed. *Consider including industry representatives in the development or providing copies of the documents to industry.*
Has your program considered providing either each investigator or the head of the local response team disks or hard copies of the industry inventory in areas of your state? This allows staff in the field to have quick access to firms located in their area in order to immediately begin response efforts.	Has your program considered providing either each investigator or the head of the local response team disks or hard copies of the industry inventory in areas of your state? This allows staff in the field to have quick access to firms located in their area in order to immediately begin response efforts. *Does your program have remote back ups for databases?*
Does your program have a list of local landfills that accept food waste? If there are too many, at least provide local supervisors with a list so in the event of a localized disaster they have this information on hand.	Does your program have a list of local landfills that accept food waste? If there are too many, at least provide local supervisors with a list so in the event of a localized disaster they have this information on hand.
Consider meeting with the state agency responsible for regulating waste facilities to establish a contact person in the event a landfill cannot be obtained during a disaster. Note: In the event of large-scale emergencies, special directions may come from the	Consider meeting with the state agency responsible for regulating waste facilities to establish a contact person in the event a landfill cannot be obtained during a disaster. Note: In the event of large-scale emergencies, special directions may come from the

Preliminary Document	Final Document
statewide emergency response office for the disposal of large amounts of waste.	statewide emergency response office for the disposal of large amounts of waste.

Familiarity (Planning and Maintenance of Procedures)

Three comments were received on elements in this category. First, a recommendation was made to provide some guidance on the initial stages of planning, including all levels of the response structure on the planning team, for example. (Lattimore 2003) This not only shows the thought that went into the document but also makes the responders more familiar with the procedures. Several reasons why the team approach is beneficial include: 1) feeling of ownership; 2) expertise from different levels of the organization or program; 3) establishment of relationships. (FEMA 1996, p.2-2)   Secondly, a recommendation was made to include emergency response exercises in the training element. Wojtala and Beerbower stated that is if this document is intended to be a " best practices" document, exercises should at least be mentioned here. Finally, a debriefing following an actual emergency response allow personnel learn from mistakes and help with the next response. Wojtala and Beerbower noted that this actually brings the phases of disaster (See Table 2.2 Food Safety Program Roles in Four Phases of Disaster Management) full circle. A comparison of the wording from the initial draft and the final document after modifications is provided in Table 5.7 below.

Table 5.7 Comparison of "Planning and Maintenance of Procedures" Between Preliminary and Final Document

Preliminary Document	Final Document
	Consider using a team approach when developing or reviewing your standard operating procedures. Be sure to include representatives from all position types (director, program liaison to the EOC and field, field supervisor, and field

Preliminary Document	Final Document
	investigator).
Establish a time each year to up date the procedures.	Establish a time each year to up date the procedures.
Establish a mechanism to ensure all staff have a copy of the procedures.	Establish a mechanism to ensure all staff have a copy of the procedures.
Hold a meeting or training at least once a year to review the procedures. These meetings could also be used for updating information as recommended in the first bullet.	Hold a meeting or training at least once a year to review the procedures. These meetings could also be used for updating information as recommended in the first bullet.
	Consider holding a response exercise. Does your state hold response exercises? Do you participate?
	Does your response team debrief following disaster situations? Consider using this tool for improving your procedures and response techniques.

Safety

      Representatives from Texas and Oregon asserted the issue of safety for the responders was totally left out of this document. Two elements of safety were specifically addressed. First safety of the staff involved in the disaster should be considered. When disaster strikes, responders themselves may be victims. Their homes may be damaged and relatives may be injured. Programs should give some thought to how this will be handled (Lattimore 2003). The second element is the safety of the responders out doing their job. Programs may want to consider developing some guidelines for dealing with dangerous situations such as downed power lines, unstable structures, looting etc. (Govro 2003) A comparison of the wording from the initial draft and the final document after modifications is provided in Table 5.8 below.

Table 5.8 Comparison of "Safety" Between Preliminary and Final Document

Preliminary Document	Final Document
No corresponding section	*How do you handle situations where responding personnel are themselves victims of the disaster? Are there actions you can take to provide assistance to them?* *Consider establishing safety guidelines for staff working in disaster stricken areas.* *Include an emergency kit containing bottled water, food snacks, and a first aid kit as part of the required equipment established in Section 6.2.* *Establish parameters under which personnel should and should not perform their duties (areas with downed power lines, flooded roads, etc.)*

Summary of Interview Results

Table 5.9 below summarizes the interview results by state and category.

Representatives from the states of Massachusetts, Michigan, Oregon, Texas and Virginia

were asked: 1) Are there any elements missing?; 2) Are there any elements that should be

removed?; 3) Are they any other comments on the how the document could be improved?

Table 5.9 Summary of Final Interview Results[13]

Ideal Type Categories	Massachusetts[1]	Michigan	Oregon	Texas	Virginia
All Hazard Approach (Section 1) • Standard operating procedures should address an all hazard approach (Section 1.1) • Purpose or Scope (Section 1.2)	No comment	• Support with refinement[2] • No comment	No comments	No comments	• Support with refinement
Definition of Disaster (Section 2) • Defines stages of disaster to determine response levels (Section 2.1) • Defines how determines the emergency plan will be implemented (Section 2.2)	No comments	• Support with refinement • No comment	No comments	• No comments • Support with refinement	• Support with refinement • Support with addition
Authority (Section 3) • Laws • Regulations	No comments	• Support with addition	No comments	No comments	• Support with refinement
Responsibilities (Section 4) • Organizational Structure (Section 4.1) • Delineation of Duties (Section 4.2)	• Support with refinements	• Support with addition • Support with addition	• Recommends additional element	• Supports with refinement	No comments
Communication and Coordination (Section 5) • Intra agency lines of communication (Section 5.1) • Inter agency lines of communication (Section 5.2)	No comments	• Support with addition • Recommends a new	No comments	• Recommends new element on communication with public	• Support with refinement to

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[13] Each category and element is matched up with the sections numbers from the model document found in Appendix A. This is the document that the representatives from the five states interviewed were sent for review.

Ideal Type Categories	Massachusetts[1]	Michigan	Oregon	Texas	Virginia

• Coordination agreements between organizations
  o Several agencies have overlapping duties (i.e. local, state, and federal agencies may all have some responsibilities for food facilities)
  o Coordination with agency responsible for waste disposal (in the event of large amounts of food products destroyed)
		element on communi-cation with industry and public			section 5.2

Resources (Section 6) • Personnel (6.1) • Equipment List (6.2) • Contact Information for Support Agencies, Industry Associations, and Major industry in area (6.3) • Priority list of fieldwork by hazard pre-established (6.4) • Decision making guidelines for dealing with damaged food and food facilities (6.5) • Listing of industry inventory (6.6) • Listing of available landfills (6.7)	No comments	• Support with addition to 6.1 • Support with addition to 6.3 • Support with addition to 6.4-6.5 • Support with addition to 6.6)	No comment		No comments
Familiarity (Section 7) • Planning (7.1) • Training (7.2)	No comments	• Support with refinement to	No comment	• Support with refinement to 7.1	• Supports

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Ideal Type Categories	Massachusetts[1]	Michigan	Oregon	Texas	Virginia
• Review (7.3) • To update information on a periodic basis • Following a disaster response		7.2			
New Category Recommendation • Safety			• Recommends new category on employee safety	• Recommends new category on safety	

[1] Recommended more concrete examples throughout document for first time users.

[2] Supports with refinement = clarification recommended for wording in element; Supports with addition = additional element bullets in category section recommended; Support=language in interview was positive toward the element; No comment = element was not discussed during interview

Justification for Ideal Categories and Elements

The purpose of the focused interviews was to provide support for the ideal categories developed through document analysis and preliminary interviews. Clearly, this was accomplished. The interviews supported the ideal categories, recommended the addition of a new category, and produced additional clarification for elements within existing categories. All five states expressed opinions that the model was a good document. Two states specifically mentioned that design of the document nudges states to consider these issues and create their own document as opposed to providing a template where information is simply inserted at the appropriate locations. (Govro, Wojtala and Beerbower, 2003) The next chapter presents the final document.

Chapter 6 Conclusion

This paper explored the issues surrounding emergency management to provide a point of departure for the creation of a document State Food Safety Programs can use as a tool to develop their own unique standard operating procedures for food safety emergency response. Since the literature is virtually silent on planning at this level, the concepts used in the final document were built through a combination of emergency response literature, state response procedures currently in use, and interviews with state food safety program personnel. This research is exploratory in nature and at this juncture there is no definitive way to justify each element included in the document, except through the opinions of experts who routinely deal with food safety emergencies. Babbie states,

> "The chief shortcoming of exploratory studies is that they seldom provide satisfactory answers to research questions, though they hint at the answers and can give insights into the research methods that could provide definitive answers." (1998, p. 91)

The document created here, however, is an exciting starting point. There is currently no document similar to the one created through this exploratory research. Support for the contents of the document began with existing literature that was tied to current practice and expert opinions from food safety personnel. The strength of the final document lies in the fact that it provides a sort of exercise programs can go through to develop their own individual set of procedures. While the purpose for this research is to allow Food Safety Programs to create standard operating procedures, in reality, any program no matter what

their area of concern in an emergency could use this document to create their own unique

procedure.

A Model Approach for Developing Food Emergency Response Standard Operating Procedures

Purpose of this Document

The purpose of this document is to provide assistance to State Food Safety Programs for the development of their own Standard Operating Procedures for Food Safety Emergency Response.

This document is intended to provide issues that programs should consider when developing emergency response procedures. Concepts were developed from the combination of emergency response literature, emergency procedures from several state food safety programs, and interviews with state food safety personnel. Considering these issues and developing procedures to deal with them, will assist programs with an effective response to any disaster situation. While the focus of this document is directed toward disasters such as floods, hurricanes, tornadoes, earthquakes, or other major events such as terrorism or food borne illness outbreaks, the procedures ultimately could be used in any situation where communication and coordination are essential.

Please note that when examples are provided in this document, the intent is only to give a general idea of recommended content in a certain section. This document is not intended to provide the exact procedures for any agency, but only to recommend essential elements that should be included in emergency response procedures.

If you have any comments as to how this document could be improved, I am very interested in your opinions. Please feel free to contact me at any time by phone at 512-719-0243 or by email at Julie.loera@tdh.state.tx.us.

An Approach to Developing Emergency Response Standard Operating Procedures

Section 1 Introduction

This section explains the purpose of your procedures and provides preliminary direction for food safety staff in the event of a disaster. Consider the following issues when developing this section:

✔ Can this plan be used in the event of any disaster? Determine what activities fall within the scope of these procedures and describe them in this section.   Consider making the procedures general so they may be used in any disaster situation or assist in transitioning from a routine event to a disaster. If certain situations need more specific instructions, provide an appendix document. For example, during a response your program may have very pointed instructions for how to deal with situations when bioterrorism is suspected that deviate from other emergency response procedures. These instructions could be provided in an appendix to the general procedures.

Example: "These procedures are appropriate for responding to any disaster or emergency encountered by this program. For special instructions on responding to potential bioterrorism events see Appendix A."

✔ What is to be accomplished by these procedures? For example, " These procedures provide emergency response staff with a framework to guide them in communication, coordination, and decision making activities in order to respond to an emergency and return the food industry and the community to normal operations as quickly and efficiently as possible."

Section 2 Definitions of Disaster

This section explains what your program considers a disaster and how these standard operating procedures are activated. This section should also explain how staff respond at each level. Consider the following issues when developing this section:

Section 2.1 Defining Disasters

✔What does your program consider a disaster?   The recommendation is that these procedures be activated for situations that disrupt daily activities or would require escalated resources such as a flood, tornado, hurricane, earthquake, or other unanticipated event such as terrorism.

✔ Has your program established escalated response levels? Examples of emergencies that may require different levels of response are:

> State wide emergency
> State wide emergency with State of Emergency Declaration
> Localized Emergency
> Natural Disaster
> Potential act of terrorism
> Foodborne Illness Outbreaks (Localized)
> Foodborne Illness Outbreaks (Multi-State)

For example: In localized emergencies such as tornados, the procedures may allow for local team leaders to make assessments and deploy staff with little direction from the food program headquarters, whereas a statewide emergency would require more extensive coordination with headquarters and State emergency operations. If the event were to be an act of terrorism against the food supply or another unanticipated event, all direction may need to come out of the headquarters.

✔How would your program handle these events where communication could not be established between field offices and headquarters? This section could be used to provide pre-established direction on the chain of command and identify who has the authority to direct field operations until contact can be established.

Section 2.2 Activation of standard operating procedures

✔ Review the decisions you made regarding disaster definitions (Section 2.1). In each one of these cases, establish how and when the procedures are to be activated.

✔ Consider an event where communication between headquarters and the emergency response staff in the area of the disaster cannot be established. Do you have pre-established local gathering points.

✔Consider providing staff instructions on activation of plan when neither of these options are feasible. Are there certain events (from those listed in Section 2.1) where staff could begin work until communication can be established? This may be essential in the event a disaster damages local and regional gathering points.

Example: In natural disasters, communications may be down for 24-72 hours and roads may be impassible in certain areas. Staff may be instructed to follow special pre-established instructions and begin work as soon as it is safe in their area. Attempts are made twice daily until communication can be established with the local supervisor or headquarters.

Please note: The point of Section 2 Definitions of Disaster is to preplan and come up with contingencies so that staff have guidance during the beginning stages of a disaster. Your state may have contingencies already established such as designated regional Emergency Operations Center, offices where staff congregates when notification of a disaster is provided via TV or radio, or where staff can access satellite phones in order to establish communications. If this is the case, provide details as to how staff are activated in these situations.

Section 3 Authority

This section identifies the laws and regulations that give authority for inspections, activities, or any special powers during a disaster situation. Consider the following issues when developing this section:

    ✔ What are the laws and regulations that give the authority to inspect, detain (also known as stop sale, retain, embargo, seize, etc.), destroy, and sample?
    ✔Do you have laws or regulations that give staff additional authorities during disaster situations?
    ✔ Does a declaration of a State of Emergency by your State Governor suspend or expand any powers?

Note: It is recommended that the laws and regulations only be referenced here but copies of the be included in emergency response supplies. See Section 6.2 Resources Equipment.

Section 4 Roles and Responsibilities

This section provides the organizational structure of the food safety program and how the food program fits into the statewide emergency response structure. In addition, this section describes the responsibilities of each position listed in the organizational chart at the program level. Consider the following when developing this section:

Section 4.1 Organizational Chart

    ✔ Does your program have an emergency response organizational chart? The chart should be very specific at the program level, to include all position types (EOC Coordinator, Division Director, Field Supervisor or Team Leader, Field Investigator, etc) responsible for emergency response. Actual staff names and contact information can be included under section 6.1 Resources – Personnel. Note: Keep in mind that the organization chart for emergency operations should be as streamlined as possible. It may not necessarily be the same as the normal operations organizational chart.

✔ What flow do the communication and authority lines follow?

✔ If one person in the chain cannot be reached (essentially breaking the flow of communication), who is contacted next?   For instance, if field personnel need assistance and their first point of contact is the Division Director, who is the contact if the Division Director cannot be reached?

✔ How does the program chart fit into the agency and state emergency response structure.

Section 4.2 Delineation of Duties

✔ For each block in the program organizational chart, clearly identify the roles and responsibilities of each position type. It is important for each member of the staff to understand their role in the process.

✔ Consider how job duties may be expanded in each level of disaster as defined in Section 2, Definitions of Disaster.

✔ Review the tasks of Command, Operations, Logistics, Planning, and Finance outlined in the Incident Command System.   Do you have personnel responsible for these duties? (For information on the Incident Command System see Guide for All-Hazard Emergency Operations Planning, Federal Emergency Management Agency)

✔ Consider how duties may change when a routine emergency event or non emergency event transitions into an emergency. For instance, when an emergency situation is emerging, the personnel first on the scene may have additional duties until additional personnel can be contacted and/or mobilized.

Section 5 Communication and Coordination

This section describes emergency response team's method of communication with the program and agency up and down the lines of authority.   This section also provides guidance communication and coordination with other agencies at the local, state and federal level. Consider the following when developing this section:

Section 5.1 Intra agency lines of Communication

✔ How do communication lines flow in each level of emergency described in Section 2 Definitions of Disaster?
  ➢ In the event of a state wide emergency response who initiates the contact and how does it flow to the field staff?
  ➢ In the event of a localized emergency where a field investigator may be the initial contact, how does communication flow back to headquarters?
  ➢ How does information flow from headquarters to the agency and state level?

✓Consider your organizational chart detailed in section 4 Roles and Responsibilities. If a position is mentioned in this section, be sure it is also on the org chart.

✓Consider how communication should continue in the event that a breakdown in communication occurs along the reporting chain. For instance, if the communication channels are down in a local area how does the field staff communicate with their team leader or field supervisor? Is there a pre-established place to meet in the local area? Do they function with limited duties until communication can be established?   If staff can function for a time without communication, be sure to develop procedures in Section 6.4 and 6.5 that detail their priorities and provides decision-making guidelines.

Section 5.2 Interagency lines of Communication.

✓ Does your agency have verbal or written agreements with other local, state, or federal agencies? Review the documents. Are they specific to issues of overlapping jurisdictions? For example, in an area with a local health department, does the agreement describe which facilities will be handled by the local jurisdiction and which ones your program will handle? If the overall agency agreement is specific, summarize the agreement and reference the document in this section.

✓ If the overall agency agreement is not specific, use this section to delineate duties between the groups. Consider holding a meeting or conference call with the agency to work out the details.

✓ How does your staff communicate across agency lines? Is there is a certain protocol? If so, describe the procedures here.

✓Can any member of your staff contact other agencies? If so, are there certain situations or conditions that dictate when the agencies are contacted? Or, is there one person within the program who is the primary contact with those agencies. If so, that position should be listed here, and should be identified in the delineation of duties and the organizational chart.

✓Consider listing the agency contact names and telephone numbers in this section or include as a document in Section 6.2 Resources, Equipment.

✓Agencies that you may want to consider including in this section are local health departments, other programs in your own agency, the state agency in charge in waste disposal, state agency in chart of drinking water, U.S. Food and Drug Administration, Centers for Disease Control, U.S. Department of Agriculture, Department of Homeland Security, etc.

Section 5.3 Communication with Industry

✓ Have you considered meeting with industry associations and major industry in your state to discuss coordination during disasters.

✓ Have you considered supplying industry with copies of guidance food safety personnel use when determining the safety and condition of food following a disaster

✓Do you have emergency contact names and numbers for industry associations and major industry in the area?

Section 5.4 Communication with the Public

✓ How is information disseminated to the public? Is there an established method for instance through an agency communications office? Does this change in statewide disasters? Provide this information here so all staff will know and understand how to handle dealing with the dissemination of emergency information for the public.

Section 6 Resources

This section provides detailed information on personnel resources, equipment that needs to maintained by staff for emergency response, firm inventory lists, land fill list and contact information.

Section 6.1 Personnel

✓Do you have a list of all food safety personnel available in each area of your state with up to date names and contact information?   Do the lists designate each person's role, first point of contact, and backup contacts?

✓Assess your personnel. Are they trained in emergency response operations? Consider assigning new and untrained personnel in support positions until proper training and can be conducted. One resource available to assist in assessing personnel is "Public Health Response to Emergencies Skills, Knowledge and Experience" Association of Food and Drug Officials.

Section 6.2 Equipment

✓Does your program have a list of equipment each investigator is expected to have available in the event of an emergency? This list should include all supplies, inspectional equipment, copies of pertinent laws and regulations, forms, contact lists, a copy of the SOP document, etc.

✓ Consider where this equipment will be kept.

Section 6.3 Contact Information

✔ Does your program have a list developed of contact information for Support Agencies (Local, State, Federal), Industry Associations, and Major Industry in each area of your state?

✔ Consider a mechanism for keeping this list current

Section 6.4   Pre-established priority list of fieldwork by hazard

✔ Does your program have a priority list for field staff to use to guide them in their activities in the field? If not, consider developing one. There may be times when communication is not possible. This list allows staff to continue the job of getting through the emergency and on the road to a faster recovery.   There may be additional requirements or needs when staff is able to check in with headquarters, but until then they have pre-established guidance.

Please note: The priorities will depend on your particular program. To start the thought process, however, a few considerations might be: 1) assessing the safety of the water supply for facilities that serve food directly to the public, manufacturers producing ready to eat foods, and water vending machines; 2) assessing facilities' capabilities for keeping potentially hazardous foods at proper temperatures during the emergency and in cases where this is not possible ensuring the food is properly handled (possible disposal); 3) assessing the condition of food for sale or raw ingredients to determine disposition status (sound condition, salvage, or disposal). The intent of this section is to provide a type of priority list for the field investigators so the workload can be handled based on risk to the public. And in the even communications cannot be immediately established there is an understanding of the preliminary priorities of the program until further direction can be obtained.

Section 6.5 Decision making guidelines for dealing with damaged food and food facilities

✔ Does your program have guidelines for dealing with food facilities affected by disaster situations? Example: if a tornado occurs, certain produce can be salvaged and other products must be destroyed; how to handle perishable foods in power outages; assessing foods that have been in contact flood waters; assessing foods in hurricanes and tornados.
➢ Consider establishing your own or use documents already completed.

> ➢ Consider including industry representatives in the development or provide copies of the documents to industry.
> ➢ If the information is too cumbersome to include in this document, refer to the guidance document here and make sure the document is included on the Equipment list in Section 6.2.

Sources for guidelines:

    State rules and regulations on temperatures for potentially hazardous food and salvaging.

    U. S Food and Drug Administration Investigations Operations Manual Chapter 9
    Food Emergency Pocket Guide, A Ready Reference from the Association of Food & Drug Officials, 2003

Section 6.6 Listing of Industry Inventory

✓ Has your program considered providing either each investigator or the head of the local response team disks or hard copies of the industry inventory in areas of your state? This allows staff in the field to have quick access to firms located in their area in order to immediately begin response efforts.

✓Does your program have remote back ups for databases?

Section 6.7 Listing of available landfills

✓ Does your program have a list of local landfills that accept food waste? If there are many, at least provide local supervisors with a list so in the event of a localized disaster, they have this information on hand.

✓ Consider meeting with the state agency responsible for regulating waste facilities to establish a contact person in the event a landfill cannot be obtained during a disaster. Note: In the event of large-scale emergencies, special directions may come from the statewide emergency response office for the disposal of large amounts of waste.

Section 7 Safety

The purpose of this section is to provide procedures for ensuring the safety for personnel responding to disasters. Consider the following when developing this section"

✓ How do you handle situations where responding personnel are themselves victims of the disaster? Are there actions you can take to provide assistance to them?

✓Consider establishing safety guidelines for staff working in disaster stricken areas.

- Include an emergency kit containing bottled water, food snacks, and a first aid kit as part of the required equipment established in Section 6.2.
- Establish parameters under which personnel should and should not perform their duties (areas with downed power lines, flooded roads, etc.)

Section 8 Planning and Maintenance of Procedures

The purpose of this section is to establish procedures for keeping the SOPs up to date, ensuring staff is familiar with the contents of the procedures, and staff training. Consider the following when developing this section:

✓ Consider using a team approach when developing or reviewing your standard operating procedures. Be sure to include a representative from all position types (director, headquarter liaison to the EOC and field, field supervisor, and field investigator). Note: The team approach brings different viewpoints to the planning stage and also gives the staff ownership and detailed knowledge of the plan.

✓ Establish a time each year to up date the procedures.

✓ Establish a mechanism to ensure all staff have a copy of the procedures.

✓ Hold a meeting or training at least once a year to review the procedures. These meetings could also be used for updating information as recommended in the first bullet.

✓ Consider holding a response exercise. Does your state hold response exercises? Do you participate?

✓ Does your response team debrief following disaster situations? Consider using this tool for improving your procedures and response techniques.

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A Model Approach for Developing Food Emergency Response Standard Operating Procedures

Preliminary DRAFT 10/20/2003

Purpose of this Document

The purpose of this document is to provide a model for State Food Safety Programs to use in the development of Standard Operating Procedures for Food Safety Emergency Response.

This document is intended to provide issues that programs should consider when developing emergency response procedures. Concepts were developed from the combination of emergency response literature, emergency procedures from several state food safety programs, and interviews with state food safety personnel. Considering these issues and developing procedures to deal with them, will assist programs with an effective response to any disaster situation. While the focus of this document is directed toward disasters such as floods, hurricanes, tornadoes, earthquakes, or other major events such as terrorism, the procedures ultimately could be used in any situation where communication and coordination are essential.

Please note that when examples are provided in this document, the intent is only to give a general idea of recommended content in a certain section. This document is not intended to provide the exact procedures for any agency, but only to recommend essential elements that should be included in emergency response procedures.

If you have any comments as to how this document could be improved, I am very interested in your opinions. Please feel free to contact me at any time by phone at 512-719-0243 or by email at Julie.loera@tdh.state.tx.us.

Draft Food Emergency Response Standard Operating Procedures

Section 1 Introduction

This section explains the purpose of your procedures and provides preliminary direction for food safety staff in the event of a disaster. Consider the following issues when developing this section:

✓ Can this plan be used in the event of any disaster? Determine what activities fall within the scope of these procedures and describe them in this section. For example, "These procedures are appropriate for responding to any disaster or emergency encountered by this program. Disasters include, but are not limited to…. Even though certain events, such as truck wrecks and fires, may be emergencies, they do not normally escalate to disaster status. Wrecks and fires can usually be handled by local field investigators without activation of these procedures."

✓ What is to be accomplished by these procedures? For example, " These procedures provide emergency response staff with a framework to guide them in communication, coordination, and decision making activities in order to respond to an emergency and return to normal operations as efficiently as possible."

Section 2 Definitions of Disaster

This section explains what your program considers a disaster and how these standard operating procedures are activated. This section should also explain how staff respond at each level. Consider the following issues when developing this section:

Section 2.1 Defining Disasters

✓What does your program consider a disaster? The recommendation is that these procedures be activated for situations that disrupt daily activities or would require escalated resources such as a flood, tornado, hurricane, earthquake, or other unanticipated event such as terrorism. While truck wrecks and fires are not normal daily activities, in most cases the events can be handled without disruption to other activities and would not necessarily be considered a disaster.

✓ Has your program established escalated response levels? Examples of emergencies that may require different levels of response are:

State wide emergency with or without State of Emergency Declaration
Localized Emergency
Natural Disaster
Potential act of terrorism

In localized emergencies such as tornados, the procedures may allow for local team leaders to make assessments and deploy staff with little direction from the food program headquarters, whereas a statewide emergency would require more extensive coordination with headquarters and State emergency operations. If the event were to be an act of terrorism against the food supply or another unanticipated event, all direction may need to come out of the headquarters.

✔How would your program handle an event where communication could not be established between field offices and headquarters? This section could be used to provide pre-established direction on the chain of command and identify who has the authority to direct field operations until contact can be established.

Section 2.2 Activation of standard operating procedures

✔ Review the decisions you made regarding levels of disaster. In each one of these cases, establish how and when are the procedures are to be activated.

✔ Consider an event where communication between headquarters and the emergency response staff in the area of the disaster cannot be established.

Please note: The point of Stages of Disaster is to preplan and come up with contingencies so that staff have guidance during the beginning stages of a disaster. Your state may have contingencies already established such as designated regional EOC offices where staff congregates when notification of a disaster is provided via TV or radio, and where staff can access satellite phones in order to establish communications. If this is the case, provide details as to how staff are activated in these situations.

Section 3 Authority

This section identifies the laws and regulations that give authority for inspections, activities, or any specials powers during a disaster situation. Consider the following issues when developing this section:

✔ What are the laws and regulations that give the authority to inspect, detain (also known as stop sale, retain, embargo), destroy, and sample?
✔Do you have laws or regulations that give staff additional authorities during disaster situations?

Appendix A
Draft Model Approach for Developing Food Safety
Emergency Response Standard Operating Procedures

Note: It is recommended that copies of the regulations be included in the sampling supplies needed for emergency response. See Section 6.2 Resources Equipment.

Section 4 Roles and Responsibilities

This section provides the organizational structure of the food safety program and how the food program fits into the statewide emergency response structure. In addition, this section describes the responsibilities of each position listed in the organizational chart at the program level. Consider the following when developing this section:

Section 4.1 Organizational Chart

✔ Does your program have an emergency response organizational chart? The chart should be very specific at the program level, to include all position types (EOC Coordinator, Division Director, Field Supervisor or Team Leader, Field Investigator, etc) responsible for emergency response. In addition, the chart should show the manner in which the program fits into the agency and state emergency response structure. Actual staff names and contact information can be included under section 6.1 Resources – Personnel.

✔ What flow should the communication and authority lines follow?

✔ If one person in the chain cannot be reached (essentially breaking the flow of communication), who is contacted next?   For instance, if field personnel need assistance and their first point of contact is the Division Director, who is the contact if the Division director is not available?

Example: to be inserted.

Section 4.2 Delineation of Duties

✔ For each block in the program organizational chart clearly identify the roles and responsibilities of each position type. It is important for each member of the staff to understand their role in the process.
✔ Consider how job duties may be expanded in each level of disaster as defined in Section 2, Definitions of Disaster.

Section 5 Communication and Coordination

This section describes emergency response team's method of communication with the program an and agency up and down the lines of authority.   This section also provides

guidance communication and coordination with other agencies at the local, state and federal level. Consider the following when developing this section:

Section 5.1 Intra agency lines of Communication

✔ How do communication lines flow in each level of emergency described in Section 2 Stages of Disaster? For instance, in the event of a state wide emergency response who initiates the contact and how does it flow to the field staff? In the event of a localized emergency where a field investigator may be the initial contact, how does communication flow back to headquarters? How does information flow from headquarters to the agency and state level? Consider your organization chart detailed in section 4 Roles and Responsibilities. If a position is mentioned in this section, be sure it is also be on the org chart.

✔Consider how communication should continue in the event that a breakdown in communication occurs along the reporting chain. For instance, if the communication channels are down in a local area how does the field staff communicate with their team leader or field supervisor? Is there a pre-established place to meet in the local area? Do they function with limited duties until communication can be established?   If staff can function for a time without communication, be sure to develop procedures in Section 6.4 and 6.5 that detail their priorities and provides decision-making guidelines.

Section 5.2 Interagency lines of Communication.

✔ Does your agency have verbal or written agreements with other local, state, or federal agencies? Review the documents. Are they specific to issues of overlapping jurisdictions? For example, in an area with a local health department, does the agreement describe which facilities will be handled by the local jurisdiction and which ones your program will handle? If the overall agency agreement is specific, summarize the agreement and reference the document in this section.

✔ If the overall agency agreement is not specific, use this section to delineate duties between the groups. Consider holding a meeting or conference call with the agency to work out the details.

✔ How does your staff communicate across agency lines? Is there is a certain protocol? If so, describe the procedures here.

✔Can any member of your staff contact other agencies? If so, are there certain situations or conditions that dictate when the agencies are contacted? Or, is there on person within the program who is the primary contract with those agencies. If so, that position should be listed here, and should be identified in the delineation of duties and the organizational chart.

✔Consider listing the agency contact names and telephone numbers in this section or include as a document in Section 6.2 Resources, Equipment.

✔Agencies that you may want to consider including in this section are local health departments, other programs in your own agency, the state agency in charge in waste disposal, U.S. Food and Drug Administration, and U.S. Department of Agriculture.

Section 6 Resources

This section provides detailed information on personnel resources, equipment that needs to maintained by staff for emergency response, firm inventory lists, land fill list and contact information. This section is the most detailed.

Section 6.1 Personnel

✔Do you have a list of all food safety personnel available in each area of your state with up to date names and contact information?   Do the lists designate each person's role, first point of contact, and backup contacts?

Section 6.2 Equipment

✔Does your program have a list of equipment each investigator is expected to have available in the event of an emergency? This list should include all supplies, inspectional equipment, copies of pertinent laws and regulations, forms, contact lists, a copy of the SOP document, etc.

Example: Provide example list

Section 6.3 Contact Information

✔ Does your program have a list developed of contact information for Support Agencies (Local, State, Federal), Industry Associations, and Major Industry in each area of your state?

Section 6.4 Pre-established priority list of fieldwork by hazard

✔ Does your program have a priority list for field staff to use to guide them in their activities in the field? If not, consider developing one. There may be times when communication is not possible. This list allows staff to continue the job of getting through the emergency and on the road to a faster recovery.   There may be additional requirements

or needs when staff is able to check in with headquarters, but until then they have pre-established guidance.

Example:

Section 6.5 Decision making guidelines for dealing with damaged food and food facilities

✔ Does your program have guidelines for dealing with food facilities affected by disaster situations? For example, if a tornado occurs, certain produce can be salvaged and other products must be destroyed.   Consider establishing your own or use documents already completed. If the information is too cumbersome to include in this document, refer to the guidance document here and make sure the document is included on the Equipment list in Section 6.2.

Sources for guidelines:
State rules and regulations on temperatures for potentially hazardous food and salvaging.
U. S Food and Drug Administration Investigations Operations Manual Chapter 9
Food Emergency Pocket Guide, A Ready Reference from the Association of Food & Drug Officials, 2003

Section 6.6 Listing of Industry Inventory

✔ Has your program considered providing either each investigator or the head of the local response team disks or hard copies of the industry inventory in areas of your state? This allows staff in the field to have quick access to firms located in their area in order to immediately begin response efforts.

Section 6.7 Listing of available landfills

✔ Does your program have a list of local landfills that accept food waste? If there are many, at least provide local supervisors with a list so in the event of a localized disaster, they have this information on hand.

✔ Consider meeting with the state agency responsible for regulating waste facilities to establish a contact person in the event a landfill cannot be obtained during a disaster. Note: In the event of large-scale emergencies, special directions may come from the statewide emergency response office for the disposal of large amounts of waste.

Section 7 Familiarity

The purpose of this section is to establish procedures for keeping the SOPs up to date, ensuring staff is familiar with the contents of the procedures, and staff training. Consider the following when developing this section:

- ✓ Establish a time each year to up date the procedures.

- ✓ Establish a mechanism to ensure all staff have a copy of the procedures.

- ✓ Hold a meeting or training at least once a year to review the procedures. These meetings could also be used for updating information as recommended in the first bullet.