



**Florida Department of Health Needs Assessment Using the Council to  
Improve Foodborne Outbreak Response Toolkit**

**Final Report**

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**February 7, 2014**

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## **INTRODUCTION**

The Florida Department of Health Needs Assessment using the Council to Improve Foodborne Outbreak Response (CIFOR) Toolkit (<http://www.cifor.us/toolkit.cfm>) was completed to obtain empirical evidence to guide future efforts by the Florida Integrated Food Safety Center of Excellence (<http://www.foodsafteyflorida.org>) to improve foodborne outbreak response in Florida.

With the aim to reduce foodborne illness in the United States, the multidisciplinary work groups of CIFOR released the “Guidelines for Foodborne Disease Outbreak Response” in 2009. To aid governmental agencies that investigate foodborne illness in adopting the practices outlined in the guidelines, the corresponding toolkit helps update agency-specific policies, identifies gaps, and targets training of staff. The toolkit has 12 focus areas, which represent the vital elements involved in a foodborne outbreak investigation, and several activities including: description of current protocols, prioritization ranking of non-implemented CIFOR recommendations, and planning to mitigate identified gaps.

The Florida Integrated Food Safety Center of Excellence is one of five Food Safety Centers of Excellence established nationally under the mandate of the 2011 Food Safety Modernization Act. Food Safety Centers of Excellence have been designated in Colorado, Florida, Minnesota, Oregon, and Tennessee (<http://www.cdc.gov/foodsafety/fsma.html#section399>). Each Food Safety Center of Excellence is a collaborative partnership between governmental agencies and academia. The Florida Integrated Food Safety Centers of Excellence primary partners are the Florida Department of Health and the University of Florida's Emerging Pathogens Institute, College of Public Health and Health Professions, and Institute for Food and Agricultural Sciences and College of Agricultural and Life Sciences. Linkages have also been established with the Florida Department of Agriculture and Consumer Services and health departments in Alabama, Georgia, Puerto Rico, and United States Virgin Islands.

The Florida Integrated Food Safety Center of Excellence serves as a resource for professional staff in local, state, and national public health agencies, particularly in dealing with outbreaks and outbreak investigations. Through auspices of the University and health departments, it also provides food safety information for consumers and industry. A needs assessment using the CIFOR Toolkit will allow for targeted assistance by the Florida Integrated Food Safety Centers of Excellence to Florida county department of health food safety professionals in subject matter areas where they are most in need.

## **METHODS**

A team comprised of Florida Department of Health senior epidemiologists reviewed the CIFOR Toolkit to identify key focus areas to be used in the review of Florida county health department foodborne outbreak response teams. The quality assurance workgroup within the Florida Department of Health Bureau of Epidemiology was also surveyed to identify top focus areas for review. Three CIFOR focus areas were selected based on the likelihood that they would identify any potential critical foodborne investigative needs, which were: Focus Area 2–Necessary Resources, Focus Area 4–Notification/Complaint Systems, and Focus Area 7–Epidemiology Investigation. The CIFOR Participant Evaluation was also selected to be incorporated in the review process. Florida Department of Health Food and Waterborne Disease Program Regional Environmental Epidemiologists (REE) traveled to each of their counties to facilitate the three CIFOR focus area reviews. Counties were encouraged to invite all personnel that would be involved in a foodborne outbreak response (e.g., epidemiology, environmental health, public information officer, administration).

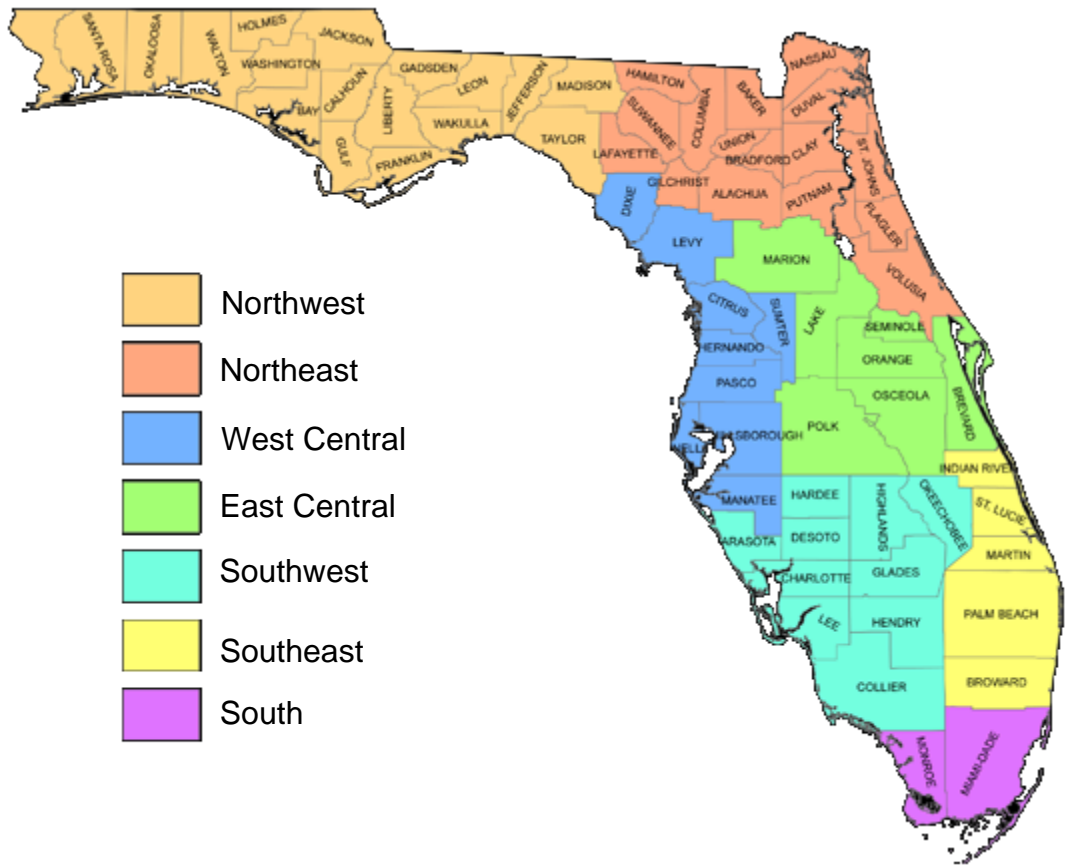
A collaborative effort on epidemiology response, including foodborne investigations, has been undertaken by a few groups of small counties. This means that the same personnel respond to a foodborne outbreak in multiple counties under the agreement. As a result, the CIFOR recommendations within those counties would not differ. To ensure these collaborative efforts do not skew the CIFOR analysis, each investigative team has been counted as a single county. The total number of counties in the CIFOR analysis will be 62, compared to the 67 actual Florida counties.

Due to the large foodborne outbreak investigation team size in one metropolitan county, the team was split and the CIFOR assessment was conducted twice to ensure all team members were able to provide feedback in the group setting. Responses from the two assessments were combined in the analysis denoting that a need exists if one of the two groups marked the recommendation as “Not in Place”. If both groups marked the CIFOR recommendation as “Not in Place”, the priority scores were averaged. This method may overestimate needs in this particular county.

Data collected from the CIFOR focus area reviews and evaluations were entered into a Microsoft Office Excel® (Microsoft Corporation, Redmond, Washington, USA) database and analyzed using SAS® v9.3 (SAS Institute Inc., Cary, North Carolina, USA). A priority for implementation score (Priority Score) was calculated by summing the “priority for implementation rankings” for all counties that indicated that the CIFOR recommendation was “Not in Place.” Only Priority Scores above a minimum score of 20 were included for ranking in each focus area to assist in identifying the most important priority needs. Each CIFOR recommendation was assessed in a statewide analysis and then stratified by county size (Table 1). A further stratification by REE region was conducted to provide information to guide regional efforts to improve foodborne outbreak response (Figure 1).

**Table 1.** County Health Department Size Rankings. (Florida Division of Administration)

Small County			
Baker	Gadsden	Jefferson	Putnam
Bradford	Gilchrist	Lafayette	Sumter
Calhoun	Glades	Levy	Suwannee
Columbia	Gulf	Liberty	Taylor
De Soto	Hamilton	Madison	Union
Dixie	Hardee	Monroe	Wakulla
Flagler	Hendry	Nassau	Walton
Franklin	Holmes	Okeechobee	Washington
Medium County			
Bay	Hernando	Manatee	Santa Rosa
Charlotte	Highlands	Martin	
Citrus	Indian River	Okaloosa	
Clay	Jackson	St. Johns	
Large County			
Alachua	Hillsborough	Osceola	Seminole
Brevard	Lake	Pasco	Volusia
Collier	Lee	Polk	
Duval	Leon	St. Lucie	
Escambia	Marion	Sarasota	
Metro County			
Broward	Orange	Palm Beach	Pinellas
Miami-Dade			



**Figure 1.** Food and Waterborne Disease Program Regional Environmental Epidemiologist Regions

## **RESULTS**

Needs assessments using the CIFOR Toolkit Focus Areas 2, 4, and 7 were conducted with each of the 62 Florida county health departments by Florida Department of Health Food and Waterborne Disease Program REEs during the spring of 2013. A total of 250 Florida county health department employees, predominantly representing epidemiology and environmental health programs, participated in the CIFOR Needs Assessments. The median number of participants per needs assessment was three, with a range of 1 to 17 participants.

CIFOR recommendations with top ranking Priority Scores (i.e., greater than 20) were reviewed for commonalities. Three common categories were identified, which are: training, process development, and resource acquisition. The focus area results are presented within the structure of these CIFOR recommendation categories.

### **Focus Area 2: Necessary Resources**

Based on the Priority Scores, the top three CIFOR recommendations among all three focus areas assessed were identified within Focus Area 2 and the training CIFOR recommendation category (Table 2). In addition to the top three scoring CIFOR recommendations, six other top-ranked CIFOR recommendations in Focus Area 2 are within the training category, highlighting the significant need to increase training of foodborne outbreak responders. The training needs identified in decreasing order of Priority Score include: outbreak response team specialty skill training (Table 24), training to understand the agency's foodborne outbreak response protocol (Table 25), foodborne outbreak training exercises (Table 26), foodborne outbreak training for surge capacity staff (Table 41), statistical analysis software training (Table 35), training to understand legal authority in a foodborne outbreak response (Table 23), outbreak investigation training during actual foodborne outbreaks (for staff with limited experience) (Table 27), standardized foodborne outbreak form training (Table 33), and train staff from non-foodborne outbreak response teams in foodborne outbreak response (Table 42).



**Table 2.** Focus Area 2: CIFOR Recommendations Ranked by Priority Score  
(Minimum Score > 20)

Rank	Score	CIFOR Recommendation	*
1	161	Provide continuing education to members of the outbreak response team so that they can maintain and improve skills in their specialty.	T
2	134	Train members of the outbreak response team in the agency's outbreak response protocol and the member's team role.	T
3	130	Exercise outbreak response team members together to identify gaps in resources and likely problem areas, ensure that team members can perform their assigned roles in outbreak response and can understand the roles and responsibilities of other team members.	T
4	102	Conduct a debriefing among members of the outbreak response team and other investigators following each outbreak to identify lessons learned.	P
5	85	Develop and provide training for these persons. (Surge Capacity Staff)	T
6	78	Ensure that staff are trained to use these tools. (Statistical Analysis Tools)	T
	78	Refine agency outbreak response preparation and planning (e.g. available resources) based on the lessons learned.	P
8	77	Review supplies regularly (at least twice a year and preferably quarterly) and replace missing or expired materials.	P
9	55	Ensure that team members (and other professional staff) understand the laws and legal authority needed to conduct an outbreak response and can demonstrate competence in applying those laws and legal authorities.	T
10	53	Ensure that all team members regularly participate in outbreak investigation and control efforts even if it means working with another jurisdiction because the team's home jurisdiction does not have many outbreaks.	T
11	51	Train staff in the use of these standardized forms to ensure proper completion by all members of the investigation team.	T
12	49	Obtain tools to analyze outbreak data (e.g., Epi Info™, SAS®) before an outbreak occurs.	R
13	38	Develop job description(s) for these persons. (Surge Capacity Staff)	P
14	29	Periodically involve agency staff who might be needed in non-foodborne disease outbreak investigations in foodborne disease outbreak response to assist in preparations for future investigations and to augment foodborne disease response resources when needed.	T
15	27	Pre-assign specific tasks to team members based on their knowledge and skills before an outbreak occurs.	P
16	23	Establish a dedicated emergency response unit if the population is large enough and the number of foodborne disease outbreaks is high enough.	P

\*Recommendation Category: T = Training; P = Process Development; R = Resource Acquisition

Stratification by county size permitted the observation of two notable variations. First, small counties need training to understand legal authority in a foodborne outbreak response to a greater degree than the larger-sized counties (41% n=11 of small counties rated as “Not in Place”) (Table 132). Second, small- (37%, n=10) and medium- (23%, n=3) sized counties indicated that training in the use of statistical analysis software was “Not Applicable” for them; whereas, none of the metro- and large-sized counties marked this training as “Not Applicable” (Table 144). Training on statistical analysis software

was “Not in Place” for 32% (n=20) among all counties (Table 35). While differences were present in CIFOR recommendations by REE region, these can be explained by county sizes within a region and knowledge of recent regional trainings that occurred prior to the CIFOR needs assessments.

Process development to undertake the implementation of some of the CIFOR recommendations has been identified as a priority need (Table 2). The process development needs identified, presented in decreasing order by Priority Score, include: conducting debriefings after foodborne outbreaks (Table 47), refine foodborne outbreak preparation and planning processes based on lessons learned (Table 48), review supplies at least bi-annually (Table 31), develop job descriptions for foodborne outbreak surge capacity staff (Table 40), pre-define tasks for personnel with specific skills (Table 22), and establish dedicated foodborne outbreak response team (Table 19). The above listed CIFOR recommendations are similar in need by county size except where expected among smaller county sizes (e.g., CIFOR Recommendation: Establish dedicated foodborne outbreak response team if the population is large enough and the number of foodborne disease outbreaks is high enough).

Significant differences among REE regions are not present.

The needs assessments identified that 23% of counties do not have statistical analysis software (e.g., Epi Info™, SAS®) in place (Table 34). When the results are stratified by county size, it is clear that small- and medium-sized counties are more likely not to have statistical analysis software in place (Table 143) and this is expected due to the fewer number of outbreaks occurring compared to larger-sized counties. Differences by REE region for this CIFOR recommendation can be explained by differences in county size within each region (Table 252).

#### Focus Area 4: Notification/Complaint Systems

Only one top CIFOR recommendation in the training category was identified as a need in Focus Area 4 (Table 3). The need to train food handlers on the importance of reporting unusual patterns of illness among workers or customers was identified as “Not in Place” among 16% (n=10) of all counties (Table 57). Variation by county size (Table 166) or REE region (Table 275) was not observed.

**Table 3.** Focus Area 4: CIFOR Recommendations Ranked by Priority Score  
(Minimum Score > 20)

Rank	Score	CIFOR Recommendation	*
1	49	Routinely distribute press releases regarding food safety that include the telephone number or website address for reporting to encourage reporting by the public.	P
2	43	Compile interview data in a single database to facilitate examination of reports for exposure clustering trends or commonalities.	P
3	32	Use one 24/7 toll-free telephone number or website address that can be remembered easily or found in the telephone directory.	R
4	29	Compare exposure information collected through the notification/complaint system with data from pathogen-specific surveillance to reveal potential connections between cases and increase the likelihood of detecting an outbreak.	P
5	26	Train food managers and workers about the importance of reporting unusual patterns of illness among workers or customers and food code requirements for disease reporting.	T

\*Recommendation Category: T = Training; P = Process Development; R = Resource Acquisition

Conducting routine public service announcements on foodborne illness was “Not in Place” for 29% (n=18) and “Not Applicable” for 18% (n=11) of all counties (Table 52). When the results are stratified by county size, smaller-sized counties are more likely to reply “Not in Place” or “Not Applicable” compared to larger-sized counties (Table 161). Variability by REE region can be accounted for by county size within each REE region (Table 270). The CIFOR recommendations to compile an interview database (Table 59) and to compare exposure information from complaints and cases (Table 61) was identified as “Not in Place” for 19% (n=12) and 13% (n=8) of all counties, respectively. For both CIFOR recommendations, variation by county size or REE region was not observed.

All Florida county health departments have the ability to receive food complaints at all times via phone. However, there is an identified need to improve linkage on Florida county health department webpages to the Florida Department of Health Food and Waterborne Disease Program Online Food Complaint Form as 15% (n=9) of counties indicated this was “Not in Place” (Table 51). Variation by county size (Table 160) or REE region (Table 269) was not observed.

## Focus Area 7: Epidemiology Investigation

Within the CIFOR Toolkit, significant overlap exists between Focus Area 7 and Focus Area 2 (Table 4), resulting in only two of the top priority CIFOR recommendations in Focus Area 7 that are not exactly the same or closely matched with those identified in Focus Area 2. While half of the Priority Scores between matching CIFOR recommendations in Focus Areas 2 and 7 are similar, the scores that vary are smaller in magnitude in Focus Area 7 compared to Focus Area 2. CIFOR recommendations in Focus Area 7 that are similar to CIFOR recommendations in Focus Area 2 do not differ in variation by county size or REE region as previously described in the results section for Focus Area 2.

**Table 4.** Focus Area 7: CIFOR Recommendations Ranked by Priority Score  
(Minimum Score > 20)

Rank	Score <sup>^</sup>	CIFOR Recommendation	*
1	119 (161)	Provide continuing education to the epidemiologic investigator to maintain and improve skills in their specialty.	T
2	105 (102)	Participate in a debriefing following each outbreak investigation with all members of the outbreak response team to identify lessons learned and compare notes on ultimate findings. Identify factors that compromised the investigation and clarify changes to procedures, resources, training and agency structure to optimize future investigations.	P
3	96 (130)	Exercise outbreak response team members together to ensure team members understand and can perform their roles and understand the roles and responsibilities of other team members.	T
4	79 (134)	Train the epidemiologic investigator in the agency's/jurisdiction's outbreak response protocols and the epidemiologic investigator's role in an investigation.	T
5	64 (53)	Ensure that all outbreak response team members regularly participate in outbreak investigation and control efforts even if it means working with another jurisdiction because the team's home jurisdiction does not have many outbreaks.	T
6	45 (49)	Obtain tools to analyze outbreak data (e.g. Epi Info <sup>TM</sup> , SAS <sup>®</sup> ) before an outbreak occurs.	R
7	33	Prepare a written protocol outlining the steps in the epidemiologic investigation of a foodborne disease outbreak.	P
8	22	Ensure that appropriate electronic record management procedures are in place during an outbreak investigation including routine data back-ups, off-site redundant storage and disaster recovery procedures.	R

\*Recommendation Category: T = Training; P = Protocol Development; R = Resource Acquisition

<sup>^</sup> Score in parentheses ( ) indicates priority of implementation score in Focus Area 2.

The two recommendations unique to Focus Area 7 pertained to the need for foodborne outbreak protocols and data back-up procedures. Among all counties, 18% (n=11) did not have a written foodborne outbreak investigation protocol (Table 80). Variation by county size or REE region was not observed. The need to ensure electronic data are securely backed-up off site was also identified with 11% (n=7) indicating that this recommendation was 'Not in Place' among all counties (Table 87). Significant variation was not observed by county size or REE region.

## Participant Evaluation

From the 250 CIFOR participants, 201 (80%) participant evaluations were completed. Among the evaluation participants, 111 (55%) individuals identified themselves as working in an environmental health (n=105), agriculture (n=3), food regulation (n=2) or other (n=1) program area; whereas 90 (45%) individuals identified themselves as working in an epidemiology (n=74) or public health nursing program (n=16). Evaluation participants indicated that they had made use of the CIFOR Toolkit, including 161 (80%) who used the kit for one meeting, 19 (9%) for multiple meetings in a short period of time (i.e., a few days), and 17 (8%) for multiple meetings over an extended period of days (i.e., over several weeks or months). The following tables summarize the responses to the CIFOR participant evaluation.

**Table 5.** The CIFOR Toolkit was easy to use.

Ranking	Frequency	Percent
Strongly Agree	51	25
Agree	137	68
Neither/Undecided	6	3
Disagree	5	3
Strongly Disagree	2	1
<b>Total</b>	<b>201</b>	<b>100</b>

**Table 6.** The CIFOR Toolkit process moved at an appropriate pace.

Ranking	Frequency	Percent
Strongly Agree	56	28
Agree	136	68
Neither/Undecided	7	4
Disagree	1	1
Strongly Disagree	1	1
<b>Total</b>	<b>201</b>	<b>100</b>

**Table 7.** The CIFOR Toolkit process supported a meaningful examination of our outbreak response activities and needed changes.

Ranking	Frequency	Percent
Strongly Agree	50	25
Agree	139	69
Neither/Undecided	10	5
Disagree	2	1
Strongly Disagree	0	0
<b>Total</b>	<b>201</b>	<b>100</b>

**Table 8.** The focus areas used to organize the CIFOR Toolkit process made sense.

Ranking	Frequency	Percent
Strongly Agree	49	24
Agree	137	68
Neither/Undecided	13	7
Disagree	1	1
Strongly Disagree	1	1
<b>Total</b>	<b>201</b>	<b>100</b>

**Table 9.** The focus areas covered most major outbreak response activities.

Ranking	Frequency	Percent
Strongly Agree	49	25
Agree	140	71
Neither/Undecided	4	2
Disagree	0	0
Strongly Disagree	0	0
<b>Total</b>	<b>198</b>	<b>100</b>

\*Missing three responses



**Table 10.** The worksheets made it easy to review outbreak response at our agency/jurisdiction and identify activities and procedures in need of improvement.

Ranking	Frequency	Percent
Strongly Agree	53	26
Agree	130	65
Neither/Undecided	16	8
Disagree	2	1
Strongly Disagree	0	0
<b>Total</b>	<b>201</b>	<b>100</b>

**Table 11.** The keys to success helped us understand the critical aspects of outbreak response in the different focus areas.

Ranking	Frequency	Percent
Strongly Agree	51	25
Agree	139	69
Neither/Undecided	9	5
Disagree	1	1
Strongly Disagree	0	0
<b>Total</b>	<b>200</b>	<b>100</b>

\*Missing one response.

**Table 12.** The worksheets helped us identify CIFOR recommendations to improve outbreak response appropriate for our agency/jurisdiction.

Ranking	Frequency	Percent
Strongly Agree	54	27
Agree	138	69
Neither/Undecided	8	4
Disagree	1	1
Strongly Disagree	0	0
<b>Total</b>	<b>201</b>	<b>100</b>

**Table 13.** Crosswalks between the CIFOR Guidelines and other quality assurance initiatives (e.g., FDA Standard 5) were useful.

Ranking	Frequency	Percent
Strongly Agree	26	13
Agree	80	40
Neither/Undecided	49	25
Disagree	3	2
Strongly Disagree	0	0
<b>Total</b>	<b>158</b>	<b>100</b>

\*Missing 43 responses.

**Table 14.** The materials included in the CIFOR Toolkit were adequate to undertake the process.

Ranking	Frequency	Percent
Strongly Agree	42	21
Agree	145	73
Neither/Undecided	10	5
Disagree	2	1
Strongly Disagree	0	0
<b>Total</b>	<b>200</b>	<b>100</b>

\*Missing one response.

Evaluation participants indicated that having the following materials would have made the CIFOR needs assessment easier.

- CIFOR booklet
- Electronic format
- FDA standards
- Flowcharts or tables of example processes would be helpful to compare with our processes
- Templates, trainings

## CONCLUSIONS

During the spring of 2013, the Florida Department of Health used the CIFOR Toolkit to identify needs in selected focus areas for necessary resources, notification and complaint systems, and epidemiological investigations. Inputs were obtained from 250 food safety professionals from all Florida county health departments. The 22 top-ranked CIFOR recommendations were based on a Priority Score greater than 20 and categorized on the basis of the type of recommendation, which included training, process development, and resource acquisition. Among all three administered focus areas in the needs assessments, the categories of training and process development both had high priority ranking CIFOR recommendations (46%, n=10 of all non-overlapping CIFOR recommendations), followed by resource acquisition (9%, n=2).

No single workshop or training will be able to address all of the training needs identified in the needs assessment as the training topics identified range in difficulty from beginner- to advanced-level foodborne outbreak responder. Examples of trainings identified as needed by beginner foodborne outbreak responders are: understanding the foodborne outbreak response process, training on standardized foodborne illness complaint forms, and understanding the laws and legal authority of foodborne outbreak responders. Examples of advanced-level trainings needed by foodborne outbreak responders are: statistical analysis software training, complex foodborne outbreak training exercises, and specialty skills training.

The necessity to address these and other immediate training needs will have to be balanced with fiscal and personnel resource limitations. Beyond addressing immediate training needs, development of a curriculum for foodborne outbreak responders offered at regular intervals in-person and in an on-demand online version may be essential to sustain and continuously improve the knowledge base of food safety professionals in Florida. Intra- and inter-agency collaboration in the development and administration of the curriculum should be considered.

Training in combination with well-developed and standardized processes is essential to improve Florida's foodborne outbreak response. However, written protocols should be limited to chain-of-

communication and sample collection as the variability of other elements within and between foodborne outbreaks would limit the feasibility of developing appropriate protocols. Written guideline documents for use in foodborne outbreak investigations should be limited to flexible, easy-to-use checklists that outline the major components and considerations of an investigation so that responders do not miss steps during the chaos that can be involved with a foodborne outbreak. The needs assessment identified several areas of foodborne investigations where knowledge of already-developed protocols and development of process checklists would improve the ability of counties to conduct thorough investigations. Examples include: regular outbreak supply reviews, public service announcements on foodborne illness, comparison of food complaints and reportable disease cases for cluster and outbreak detection, and implementation of an outbreak debriefing process. When investigations are carried out by multiple agencies, debriefings should include the entire Florida Department of Health outbreak investigation team as well as other investigation agencies (e.g., Florida Department of Agriculture and Consumer Services and the Florida Department of Business and Professional Regulation).

The CIFOR recommendations within the resource acquisition category are needs that can be readily addressed and provided for through the Florida Department of Health Food and Waterborne Disease Program and Florida Integrated Food Safety Center of Excellence. Training to inform counties that are not aware of the current Florida Department of Health automatic and daily back-up of electronic data can be provided through several different mediums (e.g., regional conference call, email, during other trainings). The need to obtain statistical analysis software can be addressed by implementation of the no-cost Centers for Disease Control and Prevention (CDC) statistical analysis software entitled Epi Info™ (<http://www.cdc.gov/epiinfo/>). The CDC has recently released Epi Info™ 7, which now offers a greater degree of capabilities in a user-friendly interface.

One of the most important outcomes identified by the needs assessment participant evaluations was that the vast majority of participants found the CIFOR Toolkit was easy to use, provided a meaningful review of their foodborne outbreak response activities, and offered guidance on what changes are needed to improve their foodborne outbreak response. The overwhelmingly positive response captured

both in the participant review and from REE feedback indicates that these same CIFOR focus areas, and possibly other focus areas, would be well-received by stakeholders and useful to improve foodborne outbreak response if incorporated in future Florida Department of Health needs assessments.

The needs identified by the CIFOR Needs Assessments will be used by both the Florida Department of Health Food and Waterborne Disease Program and Florida Integrated Food Safety Center of Excellence to establish both immediate and long-term objectives for improving responses to foodborne outbreaks in Florida. With the preliminary analysis of the evaluation completed in August 2013, the Florida Department of Health Food and Waterborne Disease Program and Florida Integrated Food Safety Center of Excellence identified an immediate objective of addressing needs in training, especially in the area of statistical analysis software training. To begin to address this need, regional single-day in-person Epi Info™ 7 trainings were completed throughout Florida during September and October 2013. During the eight Epi Info™ trainings, 93 primary regional and county foodborne outbreak responders were trained. Use of the CIFOR Needs Assessment results will continue to be used in the development of a series of online beginner foodborne outbreak investigator courses along with addressing other long-term objectives to be formulated in conjunction with the Florida Integrated Food Safety Center of Excellence.

## LESSONS LEARNED

Lessons learned from the implementation of the Florida Department of Health CIFOR Needs Assessment were identified by the Florida Department of Health REE and are captured below.

Methods that were well-received that should be incorporated for any future CIFOR Needs Assessments are:

- The importance of having all members of a county health department foodborne outbreak response team participate in the needs assessment together was evident by the many enlightening moments that occurred (i.e., there is a need for all team members to hear and understand the big picture of multidisciplinary investigations).
- County health departments, having gone through the assessment with the entire foodborne outbreak response team, appear to be implementing the self-improvement areas of concern rapidly, where they can, to improve their response capabilities.
- County health departments were grateful for the opportunity to capture in the needs assessment the hard work they are undertaking in the area of foodborne outbreak response.
- Face-to-face interaction between the state and county allowed for free flow of information, for all questions to be answered rapidly, and for new personnel to meet the other members of their foodborne outbreak response team, including the REE.
- The targeted approach of only using three focus areas of the CIFOR Toolkit was well received by the participants (i.e., appropriate amount of time).
- Face-to-face meetings provided an opportunity to set up future trainings on the spot, and thereby to have an immediate tangible outcome of the CIFOR process.
- The needs assessment was a good refresher on foodborne illness for all involved, especially if it had been a while since the last foodborne outbreak investigation.
- Providing results of the CIFOR Needs Assessment to participants for review is very important to close the feedback loop, highlight outcomes of the effort (e.g., trainings given or planned, protocol changes), and build buy-in for potential future CIFOR Needs Assessments.

Opportunities for improvement in a potential future CIFOR Needs Assessment are illustrated in the following findings:

- There is desire among the participants to conduct needs assessments in additional CIFOR focus areas to help identify and prioritize other needs to be addressed.
- Some of the CIFOR recommendations were repetitive between the selected focus areas, which was sometimes seen as a waste of time by participants.
- Small county health departments are enthusiastic about identifying needs, but are unsure about their ability to address them due to limited resources. County health department use of REE support will be important to ensure success.
- County health departments would like to understand the processes by which other county health departments are conducting successful investigations of foodborne outbreaks.
- The process on how assessments are completed should be standardized (e.g., have county health department staff fill out the needs assessment form before REE arrival and then review together, or review and fill out at time when REE is present at the county health department).

## **ACKNOWLEDGEMENTS**

The following Florida Department of Health employees are acknowledged for their contribution to the needs assessment: Carina Blackmore DVM PhD, Richard Hopkins MD MSPH, Dean Bodager RS MPA, Mike Friedman MPH, Laura Matthias MPH, Juan Suarez BS, Robin Terzagian BS, Janet Wamnes MS, and Kathleen Van Zile MS.

We would like to give a special thanks to all Florida county health department staff that took the time to participate in the CIFOR Needs Assessments.



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**APPENDICES**

**Appendix A: Statewide Detailed Analysis**

**Focus Area 2: Outbreak Response Team**

- **Table 15.** Determine the composition of the outbreak response team before an outbreak occurs.

	Frequency	Percent	Priority for Implementation or Improvement					
			Low - 1	2	3	4	5 - High	
Total	62	100						
Not in Place	4	6						
Already in Place	58	94						
Not Applicable	-	-						
			Frequency	-	1	-	1	4
			Percent	-	25	-	25	50
			Rank Score Total:	16				Average: 4.0±1.4

- **Table 16.** Use teams that include expertise in epidemiology, environmental health, the laboratory, health education and risk communication to respond to outbreaks. Members may come from different programs within an agency or different agencies.

	Frequency	Percent	Priority for Implementation or Improvement					
			Low - 1	2	3	4	5 - High	
Total	62	100						
Not in Place	4	6						
Already in Place	58	94						
Not Applicable	-	-						
			Frequency	-	1	2	1	-
			Percent	-	25	50	25	-
			Rank Score Total:	12				Average: 3.0±0.8

- **Table 17.** Designate a team leader to help set and enforce investigation priorities, coordinate activities associated with the investigation and communicate with agency decision makers and other agencies and organizations.

	Frequency	Percent	Priority for Implementation or Improvement					
			Low - 1	2	3	4	5 - High	
Total	62	100						
Not in Place	2	3						
Already in Place	60	97						
Not Applicable	-	-						
			Frequency	-	-	-	1	1
			Percent	-	-	-	50	50
			Rank Score Total:	9				Average: 4.5±0.7

- **Table 18.** Recruit additional team members with other areas of expertise depending on the unique characteristics of each outbreak.

	Frequency	Percent	Priority for Implementation or Improvement					
			Low - 1	2	3	4	5 - High	
Total	62	100						
Not in Place	4	6						
Already in Place	57	92						
Not Applicable	1	2						
			Frequency	-	-	3	-	1
			Percent	-	-	75	-	25
			Rank Score Total:	14				Average: 3.5±1.0

- **Table 19.** Establish a dedicated emergency response unit if the population is large enough and the number of foodborne disease outbreaks is high enough.

	Frequency	Percent
Total	62	100
Not in Place	7	11
Already in Place	50	81
Not Applicable	5	8

Priority for Implementation or Improvement					
	Low - 1	2	3	4	5 - High
Frequency	-	1	3	3	-
Percent	-	14	43	43	-
Rank Score Total: 23		Average: 3.3±0.8			

- **Table 20.** Ensure that members of the outbreak response team know each other.

	Frequency	Percent
Total	62	100
Not in Place	4	6
Already in Place	58	94
Not Applicable	-	-

Priority for Implementation or Improvement					
	Low - 1	2	3	4	5 - High
Frequency	-	-	-	1	3
Percent	-	-	-	25	75
Rank Score Total: 19		Average: 4.8±0.5			

- **Table 21.** Ensure all outbreak response team members have a common understanding that the primary goal for outbreak response is to implement control measures as quickly as possible to prevent illness.

	Frequency	Percent
Total	62	100
Not in Place	3	5
Already in Place	59	95
Not Applicable	-	-

Priority for Implementation or Improvement					
	Low - 1	2	3	4	5 - High
Frequency	-	-	2	1	-
Percent	-	-	67	33	-
Rank Score Total: 10		Average: 3.3±0.6			

- **Table 22.** Pre-assign specific tasks to team members based on their knowledge and skills before an outbreak occurs.

	Frequency	Percent
Total	62	100
Not in Place	7	11
Already in Place	54	87
Not Applicable	1	2

Priority for Implementation or Improvement					
	Low - 1	2	3	4	5 - High
Frequency	-	1	2	1	3
Percent	-	14	29	14	43
Rank Score Total: 27		Average: 3.9±1.2			

- **Table 23.** Ensure that team members (and other professional staff) understand the laws and legal authority needed to conduct an outbreak response and can demonstrate competence in applying those laws and legal authorities.

	Frequency	Percent
Total	62	100
Not in Place	15	24
Already in Place	47	76
Not Applicable	-	-

Priority for Implementation or Improvement					
	Low - 1	2	3	4	5 - High
Frequency	-	3	3	5	4
Percent	-	20	20	33	27
Rank Score Total: 55		Average: 3.7±1.1			

- **Table 24.** Provide continuing education to members of the outbreak response team so that they can maintain and improve skills in their specialty.

	Frequency	Percent
Total	62	100
Not in Place	38	61
Already in Place	24	39
Not Applicable	-	-

Priority for Implementation or Improvement					
	Low - 1	2	3	4	5 - High
Frequency	-	2	6	11	19
Percent	-	5	16	29	50
Rank Score Total: 161			Average: 4.2±0.9		

- **Table 25.** Train members of the outbreak response team in the agency's outbreak response protocol and the member's team role.

	Frequency	Percent
Total	62	100
Not in Place	33	53
Already in Place	29	47
Not Applicable	-	-

Priority for Implementation or Improvement					
	Low - 1	2	3	4	5 - High
Frequency	-	1	10	8	14
Percent	-	3	30	24	42
Rank Score Total: 134			Average: 4.1±0.9		

- **Table 26.** Exercise outbreak response team members together to identify gaps in resources and likely problem areas, ensure that team members can perform their assigned roles in outbreak response and can understand the roles and responsibilities of other team members.

	Frequency	Percent
Total	62	100
Not in Place	35	56
Already in Place	26	42
Not Applicable	1	2

Priority for Implementation or Improvement					
	Low - 1	2	3	4	5 - High
Frequency	-	4	11	11	9
Percent	-	11	31	31	26
Rank Score Total: 130			Average: 3.7±1.0		

- **Table 27.** Ensure that all team members regularly participate in outbreak investigation and control efforts even if it means working with another jurisdiction because the team's home jurisdiction does not have many outbreaks.

	Frequency	Percent
Total	62	100
Not in Place	18	29
Already in Place	41	66
Not Applicable	3	5

Priority for Implementation or Improvement					
	Low - 1	2	3	4	5 - High
Frequency	2	2	11	1	2
Percent	11	11	61	6	11
Rank Score Total: 53			Average: 2.9±1.1		

- **Table 28.** Have support personnel available to make phone calls, answer incoming calls from concerned members of the public, enter data into a database, copy paperwork and perform other administrative work to assist the outbreak response team.

	Frequency	Percent
Total	62	100
Not in Place	6	10
Already in Place	55	89
Not Applicable	1	2

Priority for Implementation or Improvement					
	Low - 1	2	3	4	5 - High
Frequency	-	2	2	1	1
Percent	-	33	33	17	17
Rank Score Total: 19			Average: 3.2±1.2		

- **Table 29.** Have legal counsel available to prepare public health orders, review and recommend revisions in agency procedures and control measures and address other legal concerns.

	Frequency	Percent
Total	62	100
Not in Place	1	2
Already in Place	61	98
Not Applicable	-	-

Priority for Implementation or Improvement					
	Low - 1	2	3	4	5 - High
Frequency	-	-	-	-	1
Percent	-	-	-	-	100
Rank Score Total: 5			Average: 5.0		

- **Table 30.** Keep appropriate equipment and supplies ready for use by the outbreak response team at any time.

	Frequency	Percent
Total	62	100
Not in Place	6	10
Already in Place	56	90
Not Applicable	-	-

Priority for Implementation or Improvement					
	Low - 1	2	3	4	5 - High
Frequency	3	1	1	1	-
Percent	50	17	17	17	-
Rank Score Total: 12			Average: 2.0±1.3		

- **Table 31.** Review supplies regularly (at least twice a year and preferably quarterly) and replace missing or expired materials.

	Frequency	Percent
Total	62	100
Not in Place	31	50
Already in Place	31	50
Not Applicable	-	-

Priority for Implementation or Improvement					
	Low - 1	2	3	4	5 - High
Frequency	6	11	9	3	2
Percent	19	36	29	10	7
Rank Score Total: 77			Average: 2.5±1.1		

- **Table 32.** Identify standardized outbreak-related forms (e.g., case questionnaire, environmental health assessment forms, laboratory test requisition forms) before an outbreak occurs.

	Frequency	Percent
Total	62	100
Not in Place	7	11
Already in Place	55	89
Not Applicable	-	-

Priority for Implementation or Improvement					
	Low - 1	2	3	4	5 - High
Frequency	2	2	-	2	1
Percent	29	29	-	29	14
Rank Score Total: 19			Average: 2.7±1.6		

- **Table 33.** Train staff in the use of these standardized forms to ensure proper completion by all members of the investigation team.

	Frequency	Percent
Total	62	100
Not in Place	17	27
Already in Place	45	73
Not Applicable	-	-

Priority for Implementation or Improvement					
	Low - 1	2	3	4	5 - High
Frequency	2	5	3	5	2
Percent	12	29	18	29	12
Rank Score Total: 51			Average: 3.0±1.3		

- **Table 34.** Obtain tools to analyze outbreak data (e.g., Epi Info™, SAS®) before an outbreak occurs.

	Frequency	Percent
Total	62	100
Not in Place	14	23
Already in Place	36	58
Not Applicable	12	19

Priority for Implementation or Improvement					
	Low - 1	2	3	4	5 - High
Frequency	-	5	2	2	5
Percent	-	36	14	14	36
Rank Score Total: 49			Average: 3.5±1.3		

- **Table 35.** Ensure that staff are trained to use these tools.

	Frequency	Percent
Total	62	100
Not in Place	20	32
Already in Place	29	47
Not Applicable	13	-

Priority for Implementation or Improvement					
	Low - 1	2	3	4	5 - High
Frequency	-	3	3	7	7
Percent	-	15	15	35	35
Rank Score Total: 78			Average: 3.9±1.1		

- **Table 36.** Assemble a reference library with information about foodborne diseases, enteric illnesses and control measures. When possible include electronic resources that can be accessed during field investigations.

	Frequency	Percent
Total	62	100
Not in Place	5	8
Already in Place	57	92
Not Applicable	-	-

Priority for Implementation or Improvement					
	Low - 1	2	3	4	5 - High
Frequency	-	2	1	-	2
Percent	-	40	20	-	40
Rank Score Total: 17			Average: 3.4±1.5		

- **Table 37.** Assemble a list of resource persons who have expertise in specific disease agents and investigation methodologies.

	Frequency	Percent
Total	62	100
Not in Place	4	7
Already in Place	57	92
Not Applicable	1	2

Priority for Implementation or Improvement					
	Low - 1	2	3	4	5 - High
Frequency	2	-	-	-	2
Percent	50	-	-	-	50
Rank Score Total: 12			Average: 3.0±2.3		

No additional comments were made by CIFOR Needs Assessment participants in the Focus Area 2: Outbreak Response Team section.

**Focus Area 2: Surge Capacity**

- **Table 38.** Identify persons who can conduct interviews and provide other support to the outbreak response team during large-scale outbreaks.

	Frequency	Percent
Total	62	100
Not in Place	5	8
Already in Place	57	92
Not Applicable	-	-

Priority for Implementation or Improvement					
	Low - 1	2	3	4	5 - High
Frequency	-	-	1	3	1
Percent	-	-	20	60	20
Rank Score Total: 20			Average: 4.0±0.7		

- **Table 39.** Develop a contact list and protocol for contacting these persons when needed including after-hours contact information.

	Frequency	Percent
Total	62	100
Not in Place	2	3
Already in Place	60	97
Not Applicable	-	-

Priority for Implementation or Improvement					
	Low - 1	2	3	4	5 - High
Frequency	-	-	1	-	1
Percent	-	-	50	-	50
Rank Score Total: 8			Average: 4.0±1.4		

- **Table 40.** Develop job description(s) for these persons.

	Frequency	Percent
Total	62	100
Not in Place	15	24
Already in Place	46	74
Not Applicable	1	2

Priority for Implementation or Improvement					
	Low - 1	2	3	4	5 - High
Frequency	2	6	5	1	1
Percent	13	40	33	7	7
Rank Score Total: 38			Average: 2.5±1.1		

- **Table 41.** Develop and provide training for these persons.

	Frequency	Percent
Total	62	100
Not in Place	23	37
Already in Place	39	63
Not Applicable	-	-

Priority for Implementation or Improvement					
	Low - 1	2	3	4	5 - High
Frequency	1	-	9	8	5
Percent	4	-	39	35	22
Rank Score Total: 85			Average: 3.7±1.0		

- **Table 42.** Periodically involve agency staff who might be needed in non-foodborne disease outbreak investigations in foodborne disease outbreak response to assist in preparations for future investigations and to augment foodborne disease response resources when needed.

	Frequency	Percent
Total	62	100
Not in Place	12	19
Already in Place	44	71
Not Applicable	6	10

Priority for Implementation or Improvement					
	Low - 1	2	3	4	5 - High
Frequency	3	5	1	2	1
Percent	25	42	8	17	8
Rank Score Total: 29			Average: 2.4±1.3		



- **Table 43.** Develop processes for requesting help from other agencies in the response to an outbreak.

	Frequency	Percent
Total	62	100
Not in Place	5	8
Already in Place	55	89
Not Applicable	2	3

Priority for Implementation or Improvement					
	Low - 1	2	3	4	5 - High
Frequency	-	2	1	-	2
Percent	-	40	20	-	40
Rank Score Total: 17			Average: 3.4±1.5		

- **Table 44.** Ask for help in responding to an outbreak earlier rather than later – when the scale of the outbreak seems likely to overwhelm agency resources, when it is known or suspected to be multijurisdictional or to be associated with a commercially distributed product, or when the nature of the outbreak or response is beyond the experience of agency staff.

	Frequency	Percent
Total	62	100
Not in Place	1	2
Already in Place	61	98
Not Applicable	-	-

Priority for Implementation or Improvement					
	Low - 1	2	3	4	5 - High
Frequency	-	-	-	-	1
Percent	-	-	-	-	100
Rank Score Total: 5			Average: 5.0		

- **Table 45.** Ensure that all key staff know the steps necessary in asking for help.

	Frequency	Percent
Total	62	100
Not in Place	2	3
Already in Place	60	97
Not Applicable	-	-

Priority for Implementation or Improvement					
	Low - 1	2	3	4	5 - High
Frequency	-	-	-	-	2
Percent	-	-	-	-	100
Rank Score Total: 10			Average: 5.0±0.0		

- **Table 46.** When asking for help be prepared to share as much information about the outbreak as possible including the setting of the outbreak, the population at risk, the suspected etiologic agent, the suspected source and the agencies involved.

	Frequency	Percent
Total	62	100
Not in Place	1	2
Already in Place	61	98
Not Applicable	-	-

Priority for Implementation or Improvement					
	Low - 1	2	3	4	5 - High
Frequency	-	-	-	-	1
Percent	-	-	-	-	100
Rank Score Total: 5			Average: 5.0		

No additional comments were made by CIFOR Need Assessment participants in the Focus Area 2: Surge Capacity section.

**Focus Area 2: Making Changes**

- **Table 47.** Conduct a debriefing among members of the outbreak response team and other investigators following each outbreak to identify lessons learned.

	Frequency	Percent	Priority for Implementation or Improvement					
Total	62	100		Low - 1	2	3	4	5 - High
Not in Place	33	53	Frequency	3	9	9	6	6
Already in Place	29	47	Percent	9	27	27	18	18
Not Applicable	-	-	Rank Score Total: 102	Average: 3.1±1.3				

- **Table 48.** Refine agency outbreak response preparation and planning (e.g. available resources) based on the lessons learned.

	Frequency	Percent	Priority for Implementation or Improvement					
Total	62	100		Low - 1	2	3	4	5 - High
Not in Place	23	37	Frequency	1	5	7	4	6
Already in Place	39	63	Percent	4	22	30	17	26
Not Applicable	-	-	Rank Score Total: 78	Average: 3.4±1.2				

No additional comments were made by CIFOR Need Assessment participants in the Focus Area 2: Making Changes section.

**Focus Area 4: Soliciting and Receiving Reports**

- **Table 49.** Establish a formal system for receiving reports about possible foodborne illness from the public.

	Frequency	Percent
Total	62	100
Not in Place	4	6
Already in Place	58	94
Not Applicable	-	-

Priority for Implementation or Improvement					
	Low - 1	2	3	4	5 - High
Frequency	1	-	1	1	1
Percent	25	-	25	25	25
Rank Score Total: 13			Average: 3.3±1.7		

- **Table 50.** To increase reporting, make the reporting process as simple as possible for the public.

	Frequency	Percent
Total	62	100
Not in Place	5	8
Already in Place	57	92
Not Applicable	-	-

Priority for Implementation or Improvement					
	Low - 1	2	3	4	5 - High
Frequency	1	-	1	1	2
Percent	20	-	20	20	40
Rank Score Total: 18			Average: 3.6±1.7		

- **Table 51.** Use one 24/7 toll-free telephone number or website address that can be remembered easily or found in the telephone directory.

	Frequency	Percent
Total	62	100
Not in Place	9	15
Already in Place	51	82
Not Applicable	2	3

Priority for Implementation or Improvement					
	Low - 1	2	3	4	5 - High
Frequency	-	2	3	1	3
Percent	-	22	33	11	33
Rank Score Total: 32			Average: 3.6±1.2		

- **Table 52.** Routinely distribute press releases regarding food safety that include the telephone number or website address for reporting to encourage reporting by the public.

	Frequency	Percent
Total	62	100
Not in Place	18	29
Already in Place	33	53
Not Applicable	11	18

Priority for Implementation or Improvement					
	Low - 1	2	3	4	5 - High
Frequency	2	5	9	-	2
Percent	11	28	50	-	11
Rank Score Total: 49			Average: 2.7±1.1		

- **Table 53.** Use a standard process to collect information from individuals reporting a possible foodborne illness including use of a standard interview form that solicits information on both food and nonfood exposures.

	Frequency	Percent
Total	62	100
Not in Place	1	2
Already in Place	61	98
Not Applicable	-	-

Priority for Implementation or Improvement					
	Low - 1	2	3	4	5 - High
Frequency	-	-	-	1	-
Percent	-	-	-	100	-
Rank Score Total: 4			Average: 4.0		

- **Table 54.** Collect as much information as possible during the initial report.

	Frequency	Percent
Total	62	100
Not in Place	3	5
Already in Place	59	95
Not Applicable	-	-

Priority for Implementation or Improvement					
	Low - 1	2	3	4	5 - High
Frequency	1	-	1	1	-
Percent	33	-	33	33	-
Rank Score Total: 8			Average: 2.7±1.5		

- **Table 55.** For individual complaints, collect a detailed exposure history for the 5 days before onset of illness. If norovirus is suspected, collect an exposure history for the 24 to 48 hours before onset of illness.

	Frequency	Percent
Total	62	100
Not in Place	6	10
Already in Place	49	79
Not Applicable	7	11

Priority for Implementation or Improvement					
	Low - 1	2	3	4	5 - High
Frequency	5	-	1	-	-
Percent	83	-	17	-	-
Rank Score Total: 8			Average: 1.3±0.8		

- **Table 56.** Identify and regularly communicate with agencies or organizations that receive possible foodborne illness complaints (e.g. agriculture agencies, facility licensing agencies, poison control centers, grocery stores) and ensure they have current contact information for your staff.

	Frequency	Percent
Total	62	100
Not in Place	1	2
Already in Place	60	97
Not Applicable	1	2

Priority for Implementation or Improvement					
	Low - 1	2	3	4	5 - High
Frequency	-	-	-	-	1
Percent	-	-	-	-	100
Rank Score Total: 5			Average: 5.0		

- **Table 57.** Train food managers and workers about the importance of reporting unusual patterns of illness among workers or customers and food code requirements for disease reporting.

	Frequency	Percent	Priority for Implementation or Improvement					
Total	62	100		Low - 1	2	3	4	5 - High
Not in Place	10	16	Frequency	3	1	4	1	1
Already in Place	44	71	Percent	30	10	40	10	10
Not Applicable	8	13	Rank Score Total: 26		Average: 2.6±1.4			

Additional comments made by CIFOR Needs Assessment participants in the Focus Area 4: Soliciting and Receiving Reports section included:

- ❖ Manager training (x2)
- ❖ Provide information and communication to agencies with jurisdiction to train food managers and workers about the importance of reporting unusual patterns of illness among workers or customers and food code requirements for disease reporting.

**Focus Area 4: Detection of Outbreaks/Clusters**

- **Table 58.** Set up the reporting process so all reports go through one person or one person routinely reviews all reports to increase the likelihood that patterns among individual complaints will be detected.

	Frequency	Percent
Total	62	100
Not in Place	2	3
Already in Place	60	97
Not Applicable	-	-

Priority for Implementation or Improvement					
	Low - 1	2	3	4	5 - High
Frequency	1	-	-	-	1
Percent	50	-	-	-	50
Rank Score Total: 6			Average: 3.0±2.8		

- **Table 59.** Compile interview data in a single database to facilitate examination of reports for exposure clustering trends or commonalities.

	Frequency	Percent
Total	62	100
Not in Place	12	19
Already in Place	50	81
Not Applicable	-	-

Priority for Implementation or Improvement					
	Low - 1	2	3	4	5 - High
Frequency	1	1	1	3	5
Percent	9	9	9	27	46
Rank Score Total: 43			Average: 3.9±1.4		

- **Table 60.** Review individual complaints regularly to recognize multiple persons with a similar illness or a common exposure.

	Frequency	Percent
Total	62	100
Not in Place	7	11
Already in Place	55	89
Not Applicable	-	-

Priority for Implementation or Improvement					
	Low - 1	2	3	4	5 - High
Frequency	-	1	1	1	2
Percent	-	20	20	20	40
Rank Score Total: 19			Average: 3.8±1.3		

\* Missing two responses

- **Table 61.** Compare exposure information collected through the notification/complaint system with data from pathogen-specific surveillance to reveal potential connections between cases and increase the likelihood of detecting an outbreak.

	Frequency	Percent
Total	62	100
Not in Place	8	13
Already in Place	53	86
Not Applicable	1	2

Priority for Implementation or Improvement					
	Low - 1	2	3	4	5 - High
Frequency	-	-	2	2	3
Percent	-	-	29	29	43
Rank Score Total: 29			Average: 4.1±0.9		

- **Table 62.** Check complaint information against national databases (e.g., USDA/FSIS Consumer Complaint Monitoring System) to identify cases with similar characteristics or exposures.

	Frequency	Percent	Priority for Implementation or Improvement					
Total	62	100		Low - 1	2	3	4	5 - High
Not in Place	6	10	Frequency	1	1	2	1	-
Already in Place	28	45	Percent	20	20	40	20	-
Not Applicable	28	45	Rank Score Total: 13		Average: 2.6±1.1			

No additional comments were made by CIFOR Needs Assessment participants in the Focus Area 4: Detection of Outbreaks/Cluster section.

**Focus Area 4: Responding to Individual Complaints**

- **Table 63.** Guide staff on responses to and communications with upset members of the public.

	Frequency	Percent	Priority for Implementation or Improvement					
			Low - 1	2	3	4	5 - High	
Total	62	100						
Not in Place	3	5						
Already in Place	59	95						
Not Applicable	-	-						
			Frequency	-	1	-	1	1
			Percent	-	33	-	33	33
			Rank Score Total:	11				Average: 3.7±1.5

- **Table 64.** Train staff to give appropriate instructions to persons reporting a possible foodborne illness about prevention of secondary spread and seeking health care services.

	Frequency	Percent	Priority for Implementation or Improvement					
			Low - 1	2	3	4	5 - High	
Total	62	100						
Not in Place	4	6						
Already in Place	58	94						
Not Applicable	-	-						
			Frequency	-	1	1	-	2
			Percent	-	25	25	-	50
			Rank Score Total:	15				Average: 3.8±1.5

- **Table 65.** Decide whether to routinely collect clinical specimens from independent complaints or encourage patients to seek health care.

	Frequency	Percent	Priority for Implementation or Improvement					
			Low - 1	2	3	4	5 - High	
Total	62	100						
Not in Place	3	5						
Already in Place	59	95						
Not Applicable	-	-						
			Frequency	1	-	-	1	1
			Percent	33	-	-	33	33
			Rank Score Total:	10				Average: 3.3±2.1

- **Table 66.** Prioritize the investigation of establishments named in individual complaints based on whether the complainant’s illness is consistent with foods eaten at the establishment, whether a food preparation or serving problem was reported, and the number of persons (with no other shared food history) implicating the establishment.

	Frequency	Percent	Priority for Implementation or Improvement					
			Low - 1	2	3	4	5 - High	
Total	62	100						
Not in Place	3	5						
Already in Place	59	95						
Not Applicable	-	-						
			Frequency	1	-	-	1	-
			Percent	50	-	-	50	-
			Rank Score Total:	5				Average: 2.5±2.1

\* Missing one response

No additional comments were made by CIFOR Needs Assessment participants in the Focus Area 4: Responding to Individual Complaints section.



**Focus Area 4: Responding to Group Complaints**

- **Table 67.** Investigate reports of illness among groups who ate together more aggressively than illness related to isolated individual complaints.

	Frequency	Percent	Priority for Implementation or Improvement				
			Low - 1	2	3	4	5 - High
Total	62	100					
Not in Place	1	2	-	-	-	-	1
Already in Place	61	98	-	-	-	-	100
Not Applicable	-	-	Rank Score Total: 5		Average: 5.0		

- **Table 68.** Focus interviews associated with group complaints on the event shared by members of the group. However, be aware that a group might have more than one event in common.

	Frequency	Percent	Priority for Implementation or Improvement				
			Low - 1	2	3	4	5 - High
Total	62	100					
Not in Place	1	2	-	-	-	-	1
Already in Place	61	98	-	-	-	-	100
Not Applicable	-	-	Rank Score Total: 5		Average: 5.0		

- **Table 69.** Obtain and test clinical specimens from members of the ill group. Establishing an etiology will help investigators understand the outbreak and establish links to other outbreaks or sporadic cases.

	Frequency	Percent	Priority for Implementation or Improvement				
			Low - 1	2	3	4	5 - High
Total	62	100					
Not in Place	3	5	1	-	1	-	1
Already in Place	59	95	33	-	33	-	33
Not Applicable	-	-	Rank Score Total: 9		Average: 3.0±2.0		

- **Table 70.** If the presumed exposure involves food, collect and store—but do not test—food from the implicated event. Test only after epidemiologic or environmental investigations implicate the food.

	Frequency	Percent	Priority for Implementation or Improvement				
			Low - 1	2	3	4	5 - High
Total	62	100					
Not in Place	1	2	-	-	-	-	1
Already in Place	60	97	-	-	-	-	100
Not Applicable	1	2	Rank Score Total: 5		Average: 5.0		

- **Table 71.** Test foods (rather than clinical specimens) for outbreaks thought to involve preformed toxins (e.g., enterotoxins of *Staphylococcus aureus* or *Bacillus cereus*) because detection of toxin or toxin-producing organisms in clinical specimens can be problematic.

	Frequency	Percent	Priority for Implementation or Improvement					
Total	62	100		Low - 1	2	3	4	5 - High
Not in Place	4	6	Frequency	-	-	1	1	2
Already in Place	57	92	Percent	-	-	25	25	50
Not Applicable	1	2	Rank Score Total: 17		Average: 4.3±1.0			

No additional comments were made by CIFOR Need Assessment participants in the Focus Area 4: Responding to Group Complaints section.

**Focus Area 7: Staff Skills and Expertise**

- **Table 72.** Ensure that the epidemiologic investigator on the outbreak response team has the necessary skills to plan and conduct epidemiologic studies during an outbreak investigation (e.g. expertise in case interviews, study design, questionnaire development and data analysis).

	Frequency	Percent
Total	62	100
Not in Place	5	8
Already in Place	57	92
Not Applicable	-	-

Priority for Implementation or Improvement					
	Low - 1	2	3	4	5 - High
Frequency	-	-	2	2	1
Percent	-	-	40	40	20
Rank Score Total: 19			Average: 3.8±0.8		

- **Table 73.** Provide continuing education to the epidemiologic investigator to maintain and improve skills in their specialty.

	Frequency	Percent
Total	62	100
Not in Place	30	48
Already in Place	31	50
Not Applicable	1	2

Priority for Implementation or Improvement					
	Low - 1	2	3	4	5 - High
Frequency	1	-	6	15	8
Percent	3	-	20	50	27
Rank Score Total: 119			Average: 4.0±0.9		

- **Table 74.** Train the epidemiologic investigator in the agency's/jurisdiction's outbreak response protocols and the epidemiologic investigator's role in an investigation.

	Frequency	Percent
Total	62	100
Not in Place	21	34
Already in Place	41	66
Not Applicable	-	-

Priority for Implementation or Improvement					
	Low - 1	2	3	4	5 - High
Frequency	-	1	5	8	6
Percent	-	5	25	40	30
Rank Score Total: 79			Average: 4.0±0.9		

\* Missing one response

- **Table 75.** Assemble a reference library with information about foodborne diseases, enteric illnesses and control measures. When possible include electronic resources that can be accessed during field investigations.

	Frequency	Percent
Total	62	100
Not in Place	3	5
Already in Place	59	95
Not Applicable	-	-

Priority for Implementation or Improvement					
	Low - 1	2	3	4	5 - High
Frequency	-	1	2	-	-
Percent	-	33	67	-	-
Rank Score Total: 8			Average: 2.7±0.6		

- **Table 76.** Assemble a list of resource persons who have expertise in specific disease agents and epidemiologic investigation methodologies.

	Frequency	Percent	Priority for Implementation or Improvement					
Total	62	100		Low - 1	2	3	4	5 - High
Not in Place	3	5	Frequency	2	1	-	-	-
Already in Place	59	95	Percent	67	33	-	-	-
Not Applicable	-	-	Rank Score Total: 4		Average: 1.3±0.6			

- **Table 77.** Exercise outbreak response team members together to ensure team members understand and can perform their roles and understand the roles and responsibilities of other team members.

	Frequency	Percent	Priority for Implementation or Improvement					
Total	62	100		Low - 1	2	3	4	5 - High
Not in Place	28	45	Frequency	3	3	6	11	5
Already in Place	34	55	Percent	11	11	21	39	18
Not Applicable	-	-	Rank Score Total: 96		Average: 3.4±1.2			

- **Table 78.** Ensure that all outbreak response team members regularly participate in outbreak investigation and control efforts even if it means working with another jurisdiction because the team's home jurisdiction does not have many outbreaks.

	Frequency	Percent	Priority for Implementation or Improvement					
Total	62	100		Low - 1	2	3	4	5 - High
Not in Place	22	35	Frequency	4	4	7	4	3
Already in Place	40	65	Percent	18	18	32	18	14
Not Applicable	-	-	Rank Score Total: 64		Average: 2.9±1.3			

- **Table 79.** If investigations are infrequent, centralize processes that require substantial experience for proficiency (e.g., case interviews, study design).

	Frequency	Percent	Priority for Implementation or Improvement					
Total	62	100		Low - 1	2	3	4	5 - High
Not in Place	7	11	Frequency	3	3	-	1	-
Already in Place	45	73	Percent	43	43	-	14	-
Not Applicable	-	-	Rank Score Total: 13		Average: 1.9±1.1			

No additional comments were made by CIFOR Needs Assessment participants in the Focus Area 7: Staff Skills and Expertise section.

**Focus Area 7: Outbreak Investigation**

- **Table 80.** Prepare a written protocol outlining the steps in the epidemiologic investigation of a foodborne disease outbreak.

	Frequency	Percent
Total	62	100
Not in Place	11	18
Already in Place	51	82
Not Applicable	-	-

Priority for Implementation or Improvement					
	Low - 1	2	3	4	5 - High
Frequency	3	1	2	3	2
Percent	27	9	18	27	18
Rank Score Total: 33			Average: 3.0±1.6		

- **Table 81.** Have appropriate equipment and supplies ready for use by the epidemiologic investigator when needed.

	Frequency	Percent
Total	62	100
Not in Place	5	8
Already in Place	57	92
Not Applicable	-	-

Priority for Implementation or Improvement					
	Low - 1	2	3	4	5 - High
Frequency	3	-	2	-	-
Percent	60	-	40	-	-
Rank Score Total: 9			Average: 1.8±1.1		

- **Table 82.** Use standardized forms for collecting exposure information to ensure that pertinent information is collected from all cases.

	Frequency	Percent
Total	62	100
Not in Place	1	2
Already in Place	61	98
Not Applicable	-	-

Priority for Implementation or Improvement					
	Low - 1	2	3	4	5 - High
Frequency	-	1	-	-	-
Percent	-	100	-	-	-
Rank Score Total: 2			Average: 2.0		

- **Table 83.** Use standardized “core” questions and data elements on data collection forms to enhance data sharing and comparisons across jurisdictions.

	Frequency	Percent
Total	62	100
Not in Place	1	2
Already in Place	61	98
Not Applicable	-	-

Priority for Implementation or Improvement					
	Low - 1	2	3	4	5 - High
Frequency	1	-	-	-	-
Percent	100	-	-	-	-
Rank Score Total: 1			Average: 1.0		

- **Table 84.** Develop templates for data collection forms before an outbreak occurs.

	Frequency	Percent
Total	62	100
Not in Place	3	5
Already in Place	56	90
Not Applicable	3	5

Priority for Implementation or Improvement					
	Low - 1	2	3	4	5 - High
Frequency	-	-	2	-	-
Percent	-	-	100	-	-
Rank Score Total: 6			Average: 3.0±0.0		

\* Missing one response

- **Table 85.** Obtain tools to analyze outbreak data (e.g. Epi Info™, SAS®) before an outbreak occurs.

	Frequency	Percent
Total	62	100
Not in Place	13	21
Already in Place	39	63
Not Applicable	10	16

Priority for Implementation or Improvement					
	Low - 1	2	3	4	5 - High
Frequency	1	2	2	6	2
Percent	8	15	15	46	15
Rank Score Total: 45			Average: 3.5±1.2		

- **Table 86.** Ensure that staff are trained to use these tools.  
**Note: Evaluation scoring was omitted during electronic CIFOR document creation. As a result, the majority of counties did not fill out this question.**

	Frequency	Percent
Total	4	100
Not in Place	1	25
Already in Place	3	75
Not Applicable	-	-

Priority for Implementation or Improvement					
	Low - 1	2	3	4	5 - High
Frequency	1	-	-	-	-
Percent	100	-	-	-	-
Rank Score Total: 1			Average: 1.0		

\* Missing 58 responses

- **Table 87.** Ensure that appropriate electronic record management procedures are in place during an outbreak investigation, including routine data backups, off-site redundant storage and disaster recovery procedures.

	Frequency	Percent
Total	62	100
Not in Place	7	11
Already in Place	55	89
Not Applicable	-	-

Priority for Implementation or Improvement					
	Low - 1	2	3	4	5 - High
Frequency	-	2	3	1	1
Percent	-	29	43	14	14
Rank Score Total: 22			Average: 3.1±1.1		

- **Table 88.** Determine how confidential information will be stored and whether and how it can be shared with others on the outbreak response team.

	Frequency	Percent
Total	62	100
Not in Place	1	2
Already in Place	61	98
Not Applicable	-	-

Priority for Implementation or Improvement					
	Low - 1	2	3	4	5 - High
Frequency	-	-	1		
Percent	-	-	100		
Rank Score Total: 3			Average: 3.0		

- **Table 89.** Be familiar with and follow state and federal laws and practices that protect confidential information from disclosure.

	Frequency	Percent	Priority for Implementation or Improvement					
Total	62	100		Low - 1	2	3	4	5 - High
Not in Place	1	2	Frequency	-	-	1	-	-
Already in Place	61	98	Percent	-	-	100	-	-
Not Applicable	-	-	Rank Score Total: 3		Average: 3.0			

No additional comments were made by CIFOR Needs Assessment participants in the Focus Area 7: Outbreak Investigation section.

**Focus Area 7: Identify Etiologic Agent (if unknown)**

- **Table 90.** Contact health care providers of cases who have sought medical attention to determine if a diagnosis has been confirmed.

	Frequency	Percent	Priority for Implementation or Improvement				
			Low - 1	2	3	4	5 - High
Total	62	100					
Not in Place	-	-					
Already in Place	62	100					
Not Applicable	-	-					
			Frequency		-	-	-
			Percent		-	-	-
			Rank Score Total:		-	Average: -	

- **Table 91.** Interview cases to characterize symptoms, incubation period and duration of illness to provide clues to a possible etiology.

	Frequency	Percent	Priority for Implementation or Improvement				
			Low - 1	2	3	4	5 - High
Total	62	100					
Not in Place	-	-					
Already in Place	62	100					
Not Applicable	-	-					
			Frequency		-	-	-
			Percent		-	-	-
			Rank Score Total:		-	Average: -	

- **Table 92.** Obtain stool samples from cases and establish an etiology through laboratory testing.

	Frequency	Percent	Priority for Implementation or Improvement				
			Low - 1	2	3	4	5 - High
Total	62	100					
Not in Place	1	2					
Already in Place	61	98					
Not Applicable	-	-					
			Frequency		-	-	1
			Percent		-	-	100
			Rank Score Total:		5	Average: 5.0	

No additional comments were made by CIFOR Needs Assessment participants in the Focus Area 7: Identify Etiologic Agent section.



**Focus Area 7: Identify Persons At Risk**

- **Table 93.** Identify additional cases by alerting health care providers, reviewing laboratory reports and medical charts, asking cases if they know of others who are ill, reviewing employee or school absences, reviewing death certificates, surveying the affected population or asking the public to contact the health department if they have the illness under investigation.

	Frequency	Percent	Priority for Implementation or Improvement				
			Low - 1	2	3	4	5 - High
Total	62	100					
Not in Place	2	3					
Already in Place	60	97					
Not Applicable	-	-					
			Rank Score Total: 6		Average: 2.0±0.0		

- **Table 94.** If an outbreak is related to an event or establishment, obtain a list of persons attending the event or a list of persons patronizing the establishment during the outbreak period.

	Frequency	Percent	Priority for Implementation or Improvement				
			Low - 1	2	3	4	5 - High
Total	62	100					
Not in Place	-	-					
Already in Place	62	100					
Not Applicable	-	-					
			Rank Score Total: -		Average: -		

- **Table 95.** If an outbreak is related to an event or establishment, interview persons who attended the event or patronized the establishment to identify cases and determine attack rates by time.

	Frequency	Percent	Priority for Implementation or Improvement				
			Low - 1	2	3	4	5 - High
Total	62	100					
Not in Place	-	-					
Already in Place	62	100					
Not Applicable	-	-					
			Rank Score Total: -		Average: -		

No additional comments were made by CIFOR Needs Assessment participants in the Focus Area 7: Identify Persons At Risk section.

**Focus Area 7: Identify Mode Of Transmission And Vehicle**

- **Table 96.** Establish a case definition based on the etiologic agent and/or clinical characteristics of the illness associated with the outbreak with restrictions by time, place and person.

	Frequency	Percent	Priority for Implementation or Improvement				
			Low - 1	2	3	4	5 - High
Total	62	100					
Not in Place	-	-					
Already in Place	62	100					
Not Applicable	-	-					
			Frequency		-	-	-
			Percent		-	-	-
			Rank Score Total:		-		
			Average:		-		

- **Table 97.** Characterize cases by person, place, and time and evaluate this descriptive epidemiology to identify patterns suggestive of particular food items or diets.

	Frequency	Percent	Priority for Implementation or Improvement				
			Low - 1	2	3	4	5 - High
Total	62	100					
Not in Place	-	-					
Already in Place	62	100					
Not Applicable	-	-					
			Frequency		-	-	-
			Percent		-	-	-
			Rank Score Total:		-		
			Average:		-		

- **Table 98.** Collect exposure histories from patients as soon as possible after they are reported by using techniques to improve food history recall.

	Frequency	Percent	Priority for Implementation or Improvement				
			Low - 1	2	3	4	5 - High
Total	62	100					
Not in Place	-	-					
Already in Place	62	-					
Not Applicable	-	-					
			Frequency		-	-	-
			Percent		-	-	-
			Rank Score Total:		-		
			Average:		-		

- **Table 99.** To improve food history recall, encourage cases to remember what they ate by looking at a calendar for the appropriate period and elaborating on where they ate, with whom, and events associated with the meal.

	Frequency	Percent	Priority for Implementation or Improvement				
			Low - 1	2	3	4	5 - High
Total	62	100					
Not in Place	2	3					
Already in Place	60	97					
Not Applicable	-	-					
			Frequency		1	-	1
			Percent		50	-	50
			Rank Score Total:		4		
			Average:		2.0±1.4		

- **Table 100.** To improve food history recall, enlist the help of those preparing meals for case(s) during the period of interest.

	Frequency	Percent
Total	62	100
Not in Place	1	2
Already in Place	60	97
Not Applicable	1	2

Priority for Implementation or Improvement					
	Low - 1	2	3	4	5 - High
Frequency	-	-	1		
Percent	-	-	100		
Rank Score Total: 3			Average: 3.0		

- **Table 101.** To improve food history recall, obtain cash register or credit card receipts from cases to identify/verify food purchases and places where food was consumed.

	Frequency	Percent
Total	62	100
Not in Place	3	5
Already in Place	53	85
Not Applicable	6	10

Priority for Implementation or Improvement					
	Low - 1	2	3	4	5 - High
Frequency	2	1	-	-	-
Percent	67	33	-	-	-
Rank Score Total: 4			Average: 1.3±0.6		

- **Table 102.** To help cases think about all exposures, provide a structured list of places where cases might get food including food pantries, farmers' markets, conference meetings and caterers.

	Frequency	Percent
Total	62	100
Not in Place	3	5
Already in Place	56	90
Not Applicable	3	5

Priority for Implementation or Improvement					
	Low - 1	2	3	4	5 - High
Frequency	3	-	-	-	-
Percent	100	-	-	-	-
Rank Score Total: 3			Average: 1.0±0.0		

- **Table 103.** Work with grocery stores where cases purchased food to obtain shopper card purchase records to identify/verify food purchases.

	Frequency	Percent
Total	62	100
Not in Place	3	5
Already in Place	41	66
Not Applicable	18	29

Priority for Implementation or Improvement					
	Low - 1	2	3	4	5 - High
Frequency	2	1	-	-	-
Percent	67	33	-	-	-
Rank Score Total: 4			Average: 1.3±0.6		

- **Table 104.** Document brand names and product code information for prepackaged food items consumed by cases.

	Frequency	Percent	Priority for Implementation or Improvement				
			Low - 1	2	3	4	5 - High
Total	62	100					
Not in Place	2	3	1	-	1	-	-
Already in Place	60	97	50	-	50	-	-
Not Applicable	-	-	Rank Score Total: 4		Average: 2.0±1.4		

- **Table 105.** Explore other sources of information (in addition to interview information from cases) such as product distribution data.

	Frequency	Percent	Priority for Implementation or Improvement				
			Low - 1	2	3	4	5 - High
Total	62	100					
Not in Place	2	3	1	1	-	-	-
Already in Place	57	92	50	50	-	-	-
Not Applicable	3	5	Rank Score Total: 3		Average: 1.5±0.7		

- **Table 106.** If resources are sufficient, interview cases with a detailed exposure history questionnaire as they are reported (i.e., before an outbreak has been recognized).

	Frequency	Percent	Priority for Implementation or Improvement				
			Low - 1	2	3	4	5 - High
Total	62	100					
Not in Place	1	2	1	-	-	-	-
Already in Place	56	90	100	-	-	-	-
Not Applicable	5	8	Rank Score Total: 1		Average: 1.0		

- **Table 107.** When resources are insufficient to conduct detailed exposure history interviews at the initial report, collect information about limited high-risk exposures associated with the pathogen when the case is reported followed by a more detailed interview if a cluster is recognized.

	Frequency	Percent	Priority for Implementation or Improvement				
			Low - 1	2	3	4	5 - High
Total	62	100					
Not in Place	-	-	-	-	-	-	-
Already in Place	57	92	-	-	-	-	-
Not Applicable	5	8	Rank Score Total: -		Average: -		

- **Table 108.** If conducting detailed exposure history interviews with cases only after a cluster is identified, either use the results for hypothesis generation with subsequent testing of those hypotheses in a controlled study or use the detailed exposure history questionnaire on an appropriate set of controls at the same time thereby combining hypothesis generation and testing.

	Frequency	Percent	Priority for Implementation or Improvement				
			Low - 1	2	3	4	5 - High
Total	62	100					
Not in Place	1	2	-	-	1	-	-
Already in Place	57	92	-	-	100	-	-
Not Applicable	4	6					
			Rank Score Total: 3		Average: 3.0		

- **Table 109.** Use a dynamic cluster investigation process to generate hypotheses about an outbreak. Interview initial cases within a cluster using a detailed exposure history questionnaire and systematically re-interview those same cases as new exposures are identified.

	Frequency	Percent	Priority for Implementation or Improvement				
			Low - 1	2	3	4	5 - High
Total	62	100					
Not in Place	2	3	1	1	-	-	-
Already in Place	59	95	50	50	-	-	-
Not Applicable	1	2					
			Rank Score Total: 3		Average: 1.5±0.7		

- **Table 110.** Interview appropriate non-ill persons to obtain exposure information for comparisons in case-control or cohort studies.

	Frequency	Percent	Priority for Implementation or Improvement				
			Low - 1	2	3	4	5 - High
Total	62	100					
Not in Place	1	2	-	1	-	-	-
Already in Place	61	98	-	100	-	-	-
Not Applicable	-	-					
			Rank Score Total: 2		Average: 2.0		

- **Table 111.** Interview non-outbreak-associated ill persons (i.e. cases with microbial agents other than the agent under investigation from the same time) to obtain exposure information for controls for case-case analytic studies.

	Frequency	Percent	Priority for Implementation or Improvement				
			Low - 1	2	3	4	5 - High
Total	62	100					
Not in Place	2	3	2	-	-	-	-
Already in Place	51	82	100	-	-	-	-
Not Applicable	9	15					
			Rank Score Total: 2		Average: 1.0±0.0		

- **Table 112.** Compare exposure frequencies among cases against known or estimated background exposure rates such as those found in the “*FoodNet Population Survey Atlas of Exposures, 2006-2009*” to identify suspected food items.

	Frequency	Percent	Priority for Implementation or Improvement					
Total	62	100		Low - 1	2	3	4	5 - High
Not in Place	4	7	Frequency	-	1	3	-	-
Already in Place	31	50	Percent	-	25	75	-	-
Not Applicable	27	44	Rank Score Total: 11		Average: 2.8±0.5			

- **Table 113.** In the absence of survey data or data from a control group, use common sense estimates of the prevalence of a given exposure to identify exposures of interest among cases.

	Frequency	Percent	Priority for Implementation or Improvement					
Total	62	100		Low - 1	2	3	4	5 - High
Not in Place	1	2	Frequency	1	-	-	-	-
Already in Place	48	77	Percent	100	-	-	-	-
Not Applicable	13	21	Rank Score Total: 1		Average: 1.0			

No additional comments were made by CIFOR Needs Assessment participants in the Focus Area 7: Identify Mode Of Transmission And Vehicle section.

**Focus Area 7: Determine Potential For Ongoing Transmission**

- **Table 114.** On the basis of the agent, incubation period, and likelihood of secondary spread, create an epidemic curve and evaluate the course of the epidemic to determine whether cases might still be occurring.

	Frequency	Percent
Total	62	100
Not in Place	-	-
Already in Place	62	98
Not Applicable	1	2

Priority for Implementation or Improvement					
	Low - 1	2	3	4	5 - High
Frequency	-	-	-	-	-
Percent	-	-	-	-	-
Rank Score Total: -			Average: -		

- **Table 115.** If the outbreak appears to be ongoing, continue surveillance and review potential abatement procedures.

	Frequency	Percent
Total	62	100
Not in Place	-	-
Already in Place	62	100
Not Applicable	-	-

Priority for Implementation or Improvement					
	Low - 1	2	3	4	5 - High
Frequency	-	-	-	-	-
Percent	-	-	-	-	-
Rank Score Total: -			Average: -		

No additional comments were made by CIFOR Needs Assessment participants in the Focus Area 7: Determine Potential for Ongoing Transmission section.

**Focus Area 7: Communication**

- **Table 116.** Ensure that outbreak response team members know each other before an outbreak occurs.

	Frequency	Percent
Total	62	100
Not in Place	1	2
Already in Place	61	98
Not Applicable	-	-

Priority for Implementation or Improvement					
	Low - 1	2	3	4	5 - High
Frequency	-	-	-	-	1
Percent	-	-	-	-	100
Rank Score Total: 5			Average: 5.0		

- **Table 117.** Establish and use routine procedures for communicating among outbreak response team members and their organizational units before an outbreak occurs.

	Frequency	Percent
Total	62	100
Not in Place	2	3
Already in Place	60	97
Not Applicable	-	-

Priority for Implementation or Improvement					
	Low - 1	2	3	4	5 - High
Frequency	1	-	1	-	-
Percent	50	-	50	-	-
Rank Score Total: 4			Average: 2.0±1.4		

- **Table 118.** Maintain close communication and coordination among members of the outbreak response team during an investigation.

	Frequency	Percent
Total	62	100
Not in Place	1	2
Already in Place	61	98
Not Applicable	-	-

Priority for Implementation or Improvement					
	Low - 1	2	3	4	5 - High
Frequency	-	1	-	-	-
Percent	-	100	-	-	-
Rank Score Total: 2			Average: 2.0		

- **Table 119.** Communicate actions taken and new outbreak information to all members of the outbreak response team in a timely manner.

	Frequency	Percent
Total	62	100
Not in Place	2	3
Already in Place	60	97
Not Applicable	-	-

Priority for Implementation or Improvement					
	Low - 1	2	3	4	5 - High
Frequency	-	1	-	-	1
Percent	-	50	-	-	50
Rank Score Total: 7			Average: 3.5±2.1		

- **Table 120.** Participate in daily meetings with the outbreak response team to update the entire team. Make sure suspicious new exposures are adequately considered by all team members.

	Frequency	Percent
Total	62	100
Not in Place	4	6
Already in Place	57	92
Not Applicable	1	2

Priority for Implementation or Improvement					
	Low - 1	2	3	4	5 - High
Frequency	2	1	-	-	1
Percent	50	25	-	-	25
Rank Score Total: 9			Average: 2.3±1.9		



- **Table 121.** Submit preliminary reports of outbreaks to CDC's National Outbreak Reporting System while the investigation is ongoing to identify potentially related outbreaks occurring in multiple places and facilitate further investigation of the outbreaks.

	Frequency	Percent	Priority for Implementation or Improvement					
Total	62	100		Low - 1	2	3	4	5 - High
Not in Place	1	2	Frequency	-	1	-	-	-
Already in Place	28	45	Percent	-	100	-	-	-
Not Applicable	33	53	Rank Score Total: 2		Average: 2.0			

No additional comments were made by CIFOR Needs Assessment participants in the Focus Area 7: Communication section.

**Focus Area 7: Making Changes**

- **Table 122.** Participate in a debriefing following each outbreak investigation with all members of the outbreak response team to identify lessons learned and compare notes on ultimate findings. Identify factors that compromised the investigation and clarify changes to procedures, resources, training and agency structure to optimize future investigations.

	Frequency	Percent	Priority for Implementation or Improvement					
Total	62	100		Low - 1	2	3	4	5 - High
Not in Place	32	52	Frequency	1	5	16	4	6
Already in Place	30	48	Percent	3	16	50	13	19
Not Applicable	-	-	Rank Score Total: 105		Average: 3.3±1.1			

- **Table 123.** Summarize investigation findings, conclusions, and recommendations in a written report consistent with the size and complexity of the investigation, including lessons learned and action items for follow-up and quality improvement.

	Frequency	Percent	Priority for Implementation or Improvement					
Total	62	100		Low - 1	2	3	4	5 - High
Not in Place	4	6	Frequency	1	-	2	-	1
Already in Place	52	84	Percent	25	-	50	-	25
Not Applicable	6	10	Rank Score Total: 12		Average: 3.0±1.6			

No additional comments were made by CIFOR Needs Assessment participants in the Focus Area 7: Making Changes section.

## Appendix B: Detailed Analysis by County Size

### Focus Area 2: Outbreak Response Team

- **Table 124.** Determine the composition of the outbreak response team before an outbreak occurs.

County Size	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	4 ( 7)	58 (94)	0 (0)	62 (100)
Small	3 (75)	24 (41)	0 (0)	27 ( 44)
Medium	0 ( 0)	13 (22)	0 (0)	13 ( 21)
Large	1 (25)	16 (28)	0 (0)	17 ( 27)
Metro	0 ( 0)	5 ( 9)	0 (0)	5 ( 8)

- **Table 125.** Use teams that include expertise in epidemiology, environmental health, the laboratory, health education, and risk communication to respond to outbreaks. Members may come from different programs within an agency or different agencies.

County Size	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	4 ( 7)	58 (94)	0 (0)	62 (100)
Small	4 (100)	23 (40)	0 (0)	27 ( 44)
Medium	0 ( 0)	13 (22)	0 (0)	13 ( 21)
Large	0 ( 0)	17 (29)	0 (0)	17 ( 27)
Metro	0 ( 0)	5 ( 9)	0 (0)	5 ( 8)

- **Table 126.** Designate a team leader to help set and enforce investigation priorities, coordinate activities associated with the investigation, and communicate with agency decision makers and other agencies and organizations.

County Size	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	2 ( 3)	60 (97)	0 (0)	62 (100)
Small	2 (100)	25 (42)	0 (0)	27 ( 44)
Medium	0 ( 0)	13 (22)	0 (0)	13 ( 21)
Large	0 ( 0)	17 (28)	0 (0)	17 ( 27)
Metro	0 ( 0)	5 ( 8)	0 (0)	5 ( 8)

- **Table 127.** Recruit additional team members with other areas of expertise depending on the unique characteristics of each outbreak.

County Size	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	4 ( 7)	57 (92)	1 ( 2)	62 (100)
Small	4 (100)	22 (39)	1 (100)	27 ( 44)
Medium	0 ( 0)	13 (23)	0 ( 0)	13 ( 21)
Large	0 ( 0)	17 (30)	0 ( 0)	17 ( 27)
Metro	0 ( 0)	5 ( 9)	0 ( 0)	5 ( 8)

- **Table 128.** Establish a dedicated emergency response unit if the population is large enough and the number of foodborne disease outbreaks is high enough.

County Size	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	7 (11)	50 (81)	5 ( 8)	62 (100)
Small	3 (43)	20 (40)	4 (80)	27 ( 44)
Medium	3 (43)	9 (18)	1 (20)	13 ( 21)
Large	1 (14)	16 (32)	0 ( 0)	17 ( 27)
Metro	0 ( 0)	5 (10)	0 ( 0)	5 ( 8)

- **Table 129.** Ensure that members of the outbreak response team know each other.

County Size	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	4 ( 7)	58 (94)	0 (0)	62 (100)
Small	1 (25)	26 (45)	0 (0)	27 ( 44)
Medium	0 ( 0)	13 (22)	0 (0)	13 ( 21)
Large	2 (50)	15 (26)	0 (0)	17 ( 27)
Metro	1 (25)	4 ( 7)	0 (0)	5 ( 8)

- **Table 130.** Ensure all outbreak response team members have a common understanding that the primary goal for outbreak response is to implement control measures as quickly as possible to prevent illness.

County Size	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	3 ( 5)	59 (95)	0 (0)	62 (100)
Small	2 (67)	25 (42)	0 (0)	27 ( 44)
Medium	0 ( 0)	13 (22)	0 (0)	13 ( 21)
Large	0 ( 0)	17 (29)	0 (0)	17 ( 27)
Metro	1 (33)	4 ( 7)	0 (0)	5 ( 8)

- **Table 131.** Pre-assign specific tasks to team members based on their knowledge and skills before an outbreak occurs.

County Size	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	7 (11)	54 (87)	1 ( 2)	62 (100)
Small	4 (57)	22 (41)	1 (100)	27 ( 44)
Medium	1 (14)	12 (22)	0 ( 0)	13 ( 21)
Large	1 (14)	16 (30)	0 ( 0)	17 ( 27)
Metro	1 (14)	4 ( 7)	0 ( 0)	5 ( 8)

- **Table 132.** Ensure that team members (and other professional staff) understand the laws and legal authority needed to conduct an outbreak response and can demonstrate competence in applying those laws and legal authorities.

County Size	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	15 (24)	47 (76)	0 (0)	62 (100)
Small	11 (73)	16 (34)	0 (0)	27 ( 44)
Medium	2 (13)	11 (23)	0 (0)	13 ( 21)
Large	1 ( 7)	16 (34)	0 (0)	17 ( 27)
Metro	1 ( 7)	4 ( 9)	0 (0)	5 ( 8)

- **Table 133.** Provide continuing education to members of the outbreak response team so that they can maintain and improve skills in their specialty.

County Size	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	38 (61)	24 (39)	0 (0)	62 (100)
Small	21 (55)	6 (25)	0 (0)	27 ( 44)
Medium	6 (16)	7 (29)	0 (0)	13 ( 21)
Large	8 (21)	9 (38)	0 (0)	17 ( 27)
Metro	3 ( 8)	2 ( 8)	0 (0)	5 ( 8)

- **Table 134.** Train members of the outbreak response team in the agency's outbreak response protocol and the member's team role.

County Size	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	33 (53)	29 (47)	0 (0)	62 (100)
Small	18 (55)	9 (31)	0 (0)	27 ( 44)
Medium	4 (12)	9 (31)	0 (0)	13 ( 21)
Large	8 (24)	9 (31)	0 (0)	17 ( 27)
Metro	3 ( 9)	2 ( 7)	0 (0)	5 ( 8)

- **Table 135.** Exercise outbreak response team members together to identify gaps in resources and likely problem areas, ensure that team members can perform their assigned roles in outbreak response, and can understand the roles and responsibilities of other team members.

County Size	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	35 (56)	26 (42)	1 ( 2)	62 (100)
Small	18 (51)	8 (31)	1 (100)	27 ( 44)
Medium	5 (14)	8 (31)	0 ( 0)	13 ( 21)
Large	10 (29)	7 (27)	0 ( 0)	17 ( 27)
Metro	2 ( 6)	3 (12)	0 ( 0)	5 ( 8)

- **Table 136.** Ensure that all team members regularly participate in outbreak investigation and control efforts even if it means working with another jurisdiction because the team's home jurisdiction does not have many outbreaks.

County Size	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	18 (29)	41 (66)	3 ( 5)	62 (100)
Small	12 (67)	13 (32)	2 (67)	27 ( 44)
Medium	3 (17)	10 (24)	0 ( 0)	13 ( 21)
Large	2 (11)	14 (34)	1 (33)	17 ( 27)
Metro	1 ( 6)	4 (10)	0 ( 0)	5 ( 8)

- **Table 137.** Have support personnel available to make phone calls, answer incoming calls from concerned members of the public, enter data into a database, copy paperwork and perform other administrative work to assist the outbreak response team.

County Size	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	6 (10)	55 (89)	1 ( 2)	62 (100)
Small	5 (83)	21 (38)	1 (100)	27 ( 44)
Medium	0 ( 0)	13 (24)	0 ( 0)	13 ( 21)
Large	1 (17)	16 (29)	0 ( 0)	17 ( 27)
Metro	0 ( 0)	5 ( 9)	0 ( 0)	5 ( 8)

- **Table 138.** Have legal counsel available to prepare public health orders, review and recommend revisions in agency procedures and control measures, and address other legal concerns.

County Size	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	1 ( 2)	61 (98)	0 (0)	62 (100)
Small	1 (100)	26 (43)	0 (0)	27 ( 44)
Medium	0 ( 0)	13 (21)	0 (0)	13 ( 21)
Large	0 ( 0)	17 (28)	0 (0)	17 ( 27)
Metro	0 ( 0)	5 ( 8)	0 (0)	5 ( 8)

- **Table 139.** Keep appropriate equipment and supplies ready for use by the outbreak response team at any time.

County Size	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	6 (10)	56 (90)	0 (0)	62 (100)
Small	5 (83)	22 (39)	0 (0)	27 ( 44)
Medium	0 ( 0)	13 (23)	0 (0)	13 ( 21)
Large	0 ( 0)	17 (30)	0 (0)	17 ( 27)
Metro	1 (17)	4 ( 7)	0 (0)	5 ( 8)

- **Table 140.** Review supplies regularly (at least twice a year and preferably quarterly) and replace missing or expired materials.

County Size	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	31 (50)	31 (50)	0 (0)	62 (100)
Small	17 (55)	10 (32)	0 (0)	27 ( 44)
Medium	6 (19)	7 (23)	0 (0)	13 ( 21)
Large	6 (19)	11 (36)	0 (0)	17 ( 27)
Metro	2 ( 7)	3 (10)	0 (0)	5 ( 8)

- **Table 141.** Identify standardized outbreak-related forms (e.g., case questionnaires, environmental health assessment forms, laboratory test requisition forms) before an outbreak occurs.

County Size	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	7 (11)	55 (89)	0 (0)	62 (100)
Small	5 (71)	22 (40)	0 (0)	27 ( 44)
Medium	0 ( 0)	13 (24)	0 (0)	13 ( 21)
Large	2 (29)	15 (27)	0 (0)	17 ( 27)
Metro	0 ( 0)	5 ( 9)	0 (0)	5 ( 8)



- **Table 142.** Train staff in the use of these standardized forms to ensure proper completion by all members of the investigation team.

County Size	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	17 (27)	45 (73)	0 (0)	62 (100)
Small	8 (47)	19 (42)	0 (0)	27 ( 44)
Medium	2 (12)	11 (24)	0 (0)	13 ( 21)
Large	5 (29)	12 (27)	0 (0)	17 ( 27)
Metro	2 (12)	3 ( 7)	0 (0)	5 ( 8)

- **Table 143.** Obtain tools to analyze outbreak data (e.g., Epi Info™, SAS®) before an outbreak occurs.

County Size	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	14 (23)	36 (58)	12 (19)	62 (100)
Small	8 (57)	9 (25)	10 (83)	27 ( 44)
Medium	3 (21)	8 (22)	2 (17)	13 ( 21)
Large	2 (14)	15 (42)	0 ( 0)	17 ( 27)
Metro	1 ( 7)	4 (11)	0 ( 0)	5 ( 8)

- **Table 144.** Ensure that staff are trained to use these tools.

County Size	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	20 (32)	29 (47)	13 (21)	62 (100)
Small	8 (40)	9 (31)	10 (77)	27 ( 44)
Medium	3 (15)	7 (24)	3 (23)	13 ( 21)
Large	7 (35)	10 (35)	0 ( 0)	17 ( 27)
Metro	2 (10)	3 (10)	0 ( 0)	5 ( 8)

- **Table 145.** Assemble a reference library with information about foodborne diseases, enteric illnesses and control measures. When possible, include electronic resources that can be accessed during field investigations.

County Size	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	5 ( 8)	57 (92)	0 (0)	62 (100)
Small	3 (60)	24 (42)	0 (0)	27 ( 44)
Medium	1 (20)	12 (21)	0 (0)	13 ( 21)
Large	0 ( 0)	17 (30)	0 (0)	17 ( 27)
Metro	1 (20)	4 ( 7)	0 (0)	5 ( 8)

- **Table 146.** Assemble a list of resource persons who have expertise in specific disease agents and investigation methodologies.

County Size	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	4 ( 7)	57 (92)	1 ( 2)	62 (100)
Small	3 (75)	24 (42)	0 ( 0)	27 ( 44)
Medium	0 ( 0)	13 (23)	0 ( 0)	13 ( 21)
Large	0 ( 0)	17 (30)	0 ( 0)	17 ( 27)
Metro	1 (25)	3 ( 5)	1 (100)	5 ( 8)

**Focus Area 2: Surge Capacity**

- **Table 147.** Identify persons who can conduct interviews and provide other support to the outbreak response team during large-scale outbreaks.

County Size	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	5 ( 8)	57 (92)	0 (0)	62 (100)
Small	4 (80)	23 (40)	0 (0)	27 ( 44)
Medium	0 ( 0)	13 (23)	0 (0)	13 ( 21)
Large	1 (20)	16 (28)	0 (0)	17 ( 27)
Metro	0 ( 0)	5 ( 9)	0 (0)	5 ( 8)

- **Table 148.** Develop a contact list and protocol for contacting these persons when needed including after-hours contact information.

County Size	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	2 ( 3)	60 (97)	0 (0)	62 (100)
Small	1 (50)	26 (43)	0 (0)	27 ( 44)
Medium	0 ( 0)	13 (22)	0 (0)	13 ( 21)
Large	1 (50)	16 (27)	0 (0)	17 ( 27)
Metro	0 ( 0)	5 ( 8)	0 (0)	5 ( 8)

- **Table 149.** Develop job description(s) for these persons.

County Size	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	15 (24)	46 (74)	1 ( 2)	62 (100)
Small	6 (40)	21 (46)	0 ( 0)	27 ( 44)
Medium	3 (20)	10 (22)	0 ( 0)	13 ( 21)
Large	5 (33)	11 (24)	1 (100)	17 ( 27)
Metro	1 ( 7)	4 ( 9)	0 ( 0)	5 ( 8)

- **Table 150.** Develop and provide training for these persons.

County Size	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	23 (37)	39 (63)	0 (0)	62 (100)
Small	12 (52)	15 (39)	0 (0)	27 ( 44)
Medium	3 (13)	10 (26)	0 (0)	13 ( 21)
Large	7 (30)	10 (26)	0 (0)	17 ( 27)
Metro	1 ( 4)	4 (10)	0 (0)	5 ( 8)

- **Table 151.** Periodically involve agency staff who might be needed in non-foodborne disease outbreak investigations in foodborne disease outbreak response to assist in preparations for future investigations and to augment foodborne disease response resources when needed.

County Size	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	12 (19)	44 (71)	6 (10)	62 (100)
Small	5 (42)	20 (46)	2 (33)	27 ( 44)
Medium	3 (25)	8 (18)	2 (33)	13 ( 21)
Large	3 (25)	12 (27)	2 (33)	17 ( 27)
Metro	1 ( 8)	4 ( 9)	0 ( 0)	5 ( 8)

- **Table 152.** Develop processes for requesting help from other agencies in the response to an outbreak.

County Size	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	5 ( 8)	55 (89)	2 ( 3)	62 (100)
Small	3 (60)	24 (44)	0 ( 0)	27 ( 44)
Medium	0 ( 0)	13 (24)	0 ( 0)	13 ( 21)
Large	1 (20)	14 (26)	2 (100)	17 ( 27)
Metro	1 (20)	4 ( 7)	0 ( 0)	5 ( 8)

- **Table 153.** Ask for help in responding to an outbreak earlier rather than later – when the scale of the outbreak seems likely to overwhelm agency resources, when it is known or suspected to be multijurisdictional or to be associated with a commercially distributed product, or when the nature of the outbreak or response is beyond the experience of agency staff.

County Size	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	1 ( 2)	61 (98)	0 (0)	62 (100)
Small	1 (100)	26 (43)	0 (0)	27 ( 44)
Medium	0 ( 0)	13 (21)	0 (0)	13 ( 21)
Large	0 ( 0)	17 (28)	0 (0)	17 ( 27)
Metro	0 ( 0)	5 ( 8)	0 (0)	5 ( 8)

- **Table 154.** Ensure that all key staff know the steps necessary in asking for help.

County Size	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	2 ( 3)	60 (97)	0 (0)	62 (100)
Small	1 (50)	26 (43)	0 (0)	27 ( 44)
Medium	0 ( 0)	13 (22)	0 (0)	13 ( 21)
Large	0 ( 0)	17 (28)	0 (0)	17 ( 27)
Metro	1 (50)	4 ( 7)	0 (0)	5 ( 8)

- **Table 155.** When asking for help be prepared to share as much information about the outbreak as possible including the setting of the outbreak, the population at risk, the suspected etiologic agent, the suspected source and the agencies involved.

County Size	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	1 ( 2)	61 (98)	0 (0)	62 (100)
Small	1 (100)	26 (43)	0 (0)	27 ( 44)
Medium	0 ( 0)	13 (21)	0 (0)	13 ( 21)
Large	0 ( 0)	17 (28)	0 (0)	17 ( 27)
Metro	0 ( 0)	5 ( 8)	0 (0)	5 ( 8)

**Focus Area 2: Making Changes**

- **Table 156.** Conduct a debriefing among members of the outbreak response team and other investigators following each outbreak to identify lessons learned.

County Size	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	33 (53)	29 (47)	0 (0)	62 (100)
Small	13 (39)	14 (48)	0 (0)	27 ( 44)
Medium	6 (18)	7 (24)	0 (0)	13 ( 21)
Large	12 (36)	5 (17)	0 (0)	17 ( 27)
Metro	2 ( 6)	3 (10)	0 (0)	5 ( 8)

- **Table 157.** Refine agency outbreak response preparation and planning (e.g. available resources) based on the lessons learned.

County Size	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	23 (37)	39 (62)	0 (0)	62 (100)
Small	11 (48)	16 (41)	0 (0)	27 ( 44)
Medium	3 (13)	10 (26)	0 (0)	13 ( 21)
Large	8 (35)	9 (23)	0 (0)	17 ( 27)
Metro	1 ( 4)	4 (10)	0 (0)	5 ( 8)

**Focus Area 4: Soliciting and Receiving Reports**

- **Table 158.** Establish a formal system for receiving reports about possible foodborne illness from the public.

County Size	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	4 ( 7)	58 (94)	0 (0)	62 (100)
Small	4 (100)	23 (40)	0 (0)	27 ( 44)
Medium	0 ( 0)	13 (22)	0 (0)	13 ( 21)
Large	0 ( 0)	17 (29)	0 (0)	17 ( 27)
Metro	0 ( 0)	5 ( 9)	0 (0)	5 ( 8)

- **Table 159.** To increase reporting, make the reporting process as simple as possible for the public.

County Size	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	5 ( 8)	57 (92)	0 (0)	62 (100)
Small	3 (60)	24 (42)	0 (0)	27 ( 44)
Medium	1 (20)	12 (21)	0 (0)	13 ( 21)
Large	1 (20)	16 (28)	0 (0)	17 ( 27)
Metro	0 ( 0)	5 ( 9)	0 (0)	5 ( 8)

- **Table 160.** Use one 24/7 toll-free telephone number or website address that can be remembered easily or found in the telephone directory.

County Size	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	9 (15)	51 (82)	2 ( 3)	62 (100)
Small	3 (33)	23 (45)	1 (50)	27 ( 44)
Medium	2 (22)	11 (22)	0 ( 0)	13 ( 21)
Large	3 (33)	14 (28)	0 ( 0)	17 ( 27)
Metro	1 (11)	3 ( 6)	1 (50)	5 ( 8)

- **Table 161.** Routinely distribute press releases regarding food safety that include the telephone number or website address for reporting to encourage reporting by the public.

County Size	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	18 (29)	33 (53)	11 (18)	62 (100)
Small	10 (56)	10 (30)	7 (64)	27 ( 44)
Medium	2 (11)	10 (30)	1 ( 9)	13 ( 21)
Large	6 (33)	9 (27)	2 (18)	17 ( 27)
Metro	0 ( 0)	4 (12)	1 ( 9)	5 ( 8)

- **Table 162.** Use a standard process to collect information from individuals reporting a possible foodborne illness including use of a standard interview form that solicits information on both food and nonfood exposures.

County Size	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	1 ( 2)	61 (98)	0 (0)	62 (100)
Small	1 (100)	26 (43)	0 (0)	27 ( 44)
Medium	0 ( 0)	13 (21)	0 (0)	13 ( 21)
Large	0 ( 0)	17 (28)	0 (0)	17 ( 27)
Metro	0 ( 0)	5 ( 8)	0 (0)	5 ( 8)

- **Table 163.** Collect as much information as possible during the initial report.

County Size	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	3 ( 5)	59 (95)	0 (0)	62 (100)
Small	1 (33)	26 (44)	0 (0)	27 ( 44)
Medium	1 (33)	12 (20)	0 (0)	13 ( 21)
Large	0 ( 0)	17 (29)	0 (0)	17 ( 27)
Metro	1 (33)	4 ( 7)	0 (0)	5 ( 8)



- **Table 164.** For individual complaints, collect a detailed exposure history for the 5 days before onset of illness. If norovirus is suspected, collect an exposure history for the 24 to 48 hours before onset of illness.

County Size	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	6 (10)	49 (79)	7 (11)	62 (100)
Small	1 (17)	25 (51)	1 (14)	27 ( 44)
Medium	0 ( 0)	11 (23)	2 (29)	13 ( 21)
Large	5 (83)	11 (23)	1 (14)	17 ( 27)
Metro	0 ( 0)	2 ( 4)	3 (43)	5 ( 8)

- **Table 165.** Identify and regularly communicate with agencies or organizations that receive possible foodborne illness complaints (e.g. agriculture agencies, facility licensing agencies, poison control centers, grocery stores) and ensure they have current contact information for your staff.

County Size	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	1 ( 2)	60 (97)	1 ( 2)	62 (100)
Small	1 (100)	26 (43)	0 ( 0)	27 ( 44)
Medium	0 ( 0)	13 (22)	0 ( 0)	13 ( 21)
Large	0 ( 0)	16 (27)	1 (100)	17 ( 27)
Metro	0 ( 0)	5 ( 8)	0 ( 0)	5 ( 8)

- **Table 166.** Train food managers and workers about the importance of reporting unusual patterns of illness among workers or customers and food code requirements for disease reporting.

County Size	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	10 (16)	44 (71)	8 (13)	62 (100)
Small	6 (60)	18 (41)	3 (38)	27 ( 44)
Medium	0 ( 0)	11 (25)	2 (25)	13 ( 21)
Large	3 (30)	11 (25)	3 (38)	17 ( 27)
Metro	1 (10)	4 ( 9)	0 ( 0)	5 ( 8)

**Focus Area 4: Detection of Outbreaks/Clusters**

- **Table 167.** Set up the reporting process so all reports go through one person or one person routinely reviews all reports to increase the likelihood that patterns among individual complaints will be detected.

County Size	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	2 ( 3)	60 (97)	0 (0)	62 (100)
Small	2 (100)	25 (42)	0 (0)	27 ( 44)
Medium	0 ( 0)	13 (22)	0 (0)	13 ( 21)
Large	0 ( 0)	17 (28)	0 (0)	17 ( 27)
Metro	0 ( 0)	5 ( 8)	0 (0)	5 ( 8)

- **Table 168.** Compile interview data in a single database to facilitate examination of reports for exposure clustering trends or commonalities.

County Size	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	12 (19)	50 (81)	0 (0)	62 (100)
Small	5 (42)	22 (44)	0 (0)	27 ( 44)
Medium	0 ( 0)	13 (26)	0 (0)	13 ( 21)
Large	7 (58)	10 (20)	0 (0)	17 ( 27)
Metro	0 ( 0)	5 (10)	0 (0)	5 ( 8)

- **Table 169.** Review individual complaints regularly to recognize multiple persons with a similar illness or a common exposure.

County Size	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	7 (11)	55 (89)	0 (0)	62 (100)
Small	4 (57)	23 (42)	0 (0)	27 ( 44)
Medium	0 ( 0)	13 (24)	0 (0)	13 ( 21)
Large	3 (43)	14 (26)	0 (0)	17 ( 27)
Metro	0 ( 0)	5 ( 9)	0 (0)	5 ( 8)

- **Table 170.** Compare exposure information collected through the notification/complaint system with data from pathogen-specific surveillance to reveal potential connections between cases and increase the likelihood of detecting an outbreak.

County Size	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	8 (13)	53 (86)	1 ( 2)	62 (100)
Small	5 (63)	21 (40)	1 (100)	27 ( 44)
Medium	0 ( 0)	13 (25)	0 ( 0)	13 ( 21)
Large	3 (38)	14 (26)	0 ( 0)	17 ( 27)
Metro	0 ( 0)	5 ( 9)	0 ( 0)	5 ( 8)

- **Table 171.** Check complaint information against national databases (e.g., USDA/FSIS Consumer Complaint Monitoring System) to identify cases with similar characteristics or exposures.

County Size	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	6 (10)	28 (45)	28 (45)	62 (100)
Small	2 (33)	16 (57)	9 (32)	27 ( 44)
Medium	1 (17)	6 (21)	6 (21)	13 ( 21)
Large	2 (33)	6 (21)	9 (32)	17 ( 27)
Metro	1 (17)	0 ( 0)	4 (14)	5 ( 8)

**Focus Area 4: Responding to Individual Complaints**

- **Table 172.** Guide staff on responses to and communications with upset members of the public.

County Size	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	3 ( 5)	59 (95)	0 (0)	62 (100)
Small	3 (100)	24 (41)	0 (0)	27 ( 44)
Medium	0 ( 0)	13 (22)	0 (0)	13 ( 21)
Large	0 ( 0)	17 (29)	0 (0)	17 ( 27)
Metro	0 ( 0)	5 ( 9)	0 (0)	5 ( 8)

- **Table 173.** Train staff to give appropriate instructions to persons reporting a possible foodborne illness about prevention of secondary spread and seeking health care services.

County Size	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	4 ( 7)	58 (94)	0 (0)	62 (100)
Small	3 (75)	24 (41)	0 (0)	27 ( 44)
Medium	0 ( 0)	13 (22)	0 (0)	13 ( 21)
Large	1 (25)	16 (28)	0 (0)	17 ( 27)
Metro	0 ( 0)	5 ( 9)	0 (0)	5 ( 8)

- **Table 174.** Decide whether to routinely collect clinical specimens from independent complaints or encourage patients to seek health care.

County Size	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	3 ( 5)	59 (95)	0 (0)	62 (100)
Small	3 (100)	24 (41)	0 (0)	27 ( 44)
Medium	0 ( 0)	13 (22)	0 (0)	13 ( 21)
Large	0 ( 0)	17 (29)	0 (0)	17 ( 27)
Metro	0 ( 0)	5 ( 9)	0 (0)	5 ( 8)

- **Table 175.** Prioritize the investigation of establishments named in individual complaints based on whether the complainant's illness is consistent with foods eaten at the establishment, whether a food preparation or serving problem was reported, and the number of persons (with no other shared food history) implicating the establishment.

County Size	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	3 ( 5)	59 (95)	0 (0)	62 (100)
Small	3 (100)	24 (41)	0 (0)	27 ( 44)
Medium	0 ( 0)	13 (22)	0 (0)	13 ( 21)
Large	0 ( 0)	17 (29)	0 (0)	17 ( 27)
Metro	0 ( 0)	5 ( 9)	0 (0)	5 ( 8)

**Focus Area 4: Responding to Group Complaints**

- **Table 176.** Investigate reports of illness among groups who ate together more aggressively than illness related to isolated individual complaints.

County Size	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	1 ( 2)	61 (98)	0 (0)	62 (100)
Small	1 (100)	26 (43)	0 (0)	27 ( 44)
Medium	0 ( 0)	13 (21)	0 (0)	13 ( 21)
Large	0 ( 0)	17 (28)	0 (0)	17 ( 27)
Metro	0 ( 0)	5 ( 8)	0 (0)	5 ( 8)

- **Table 177.** Focus interviews associated with group complaints on the event shared by members of the group. However, be aware that a group might have more than one event in common.

County Size	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	1 ( 2)	61 (98)	0 (0)	62 (100)
Small	1 (100)	26 (43)	0 (0)	27 ( 44)
Medium	0 ( 0)	13 (21)	0 (0)	13 ( 21)
Large	0 ( 0)	17 (28)	0 (0)	17 ( 27)
Metro	0 ( 0)	5 ( 8)	0 (0)	5 ( 8)

- **Table 178.** Obtain and test clinical specimens from members of the ill group. Establishing an etiology will help investigators understand the outbreak and establish links to other outbreaks or sporadic cases.

County Size	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	3 ( 5)	59 (95)	0 (0)	62 (100)
Small	2 (67)	25 (42)	0 (0)	27 ( 44)
Medium	0 ( 0)	13 (22)	0 (0)	13 ( 21)
Large	1 (33)	16 (27)	0 (0)	17 ( 27)
Metro	0 ( 0)	5 ( 9)	0 (0)	5 ( 8)

- **Table 179.** If the presumed exposure involves food, collect and store—but do not test—food from the implicated event. Test only after epidemiologic or environmental investigations implicate the food.

County Size	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	1 ( 2)	60 (97)	1 ( 2)	62 (100)
Small	1 (100)	26 (43)	0 ( 0)	27 ( 44)
Medium	0 ( 0)	12 (20)	1 (100)	13 ( 21)
Large	0 ( 0)	17 (28)	0 ( 0)	17 ( 27)
Metro	0 ( 0)	5 ( 8)	0 ( 0)	5 ( 8)

- **Table 180.** Test foods (rather than clinical specimens) for outbreaks thought to involve preformed toxins (e.g., enterotoxins of *Staphylococcus aureus* or *Bacillus cereus*) because detection of toxin or toxin-producing organisms in clinical specimens can be problematic.

County Size	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	4 ( 7)	57 (92)	1 ( 2)	62 (100)
Small	1 (25)	26 (46)	0 ( 0)	27 ( 44)
Medium	0 ( 0)	12 (21)	1 (100)	13 ( 21)
Large	2 (50)	15 (26)	0 ( 0)	17 ( 27)
Metro	1 (25)	4 ( 7)	0 ( 0)	5 ( 8)

**Focus Area 7: Staff Skills and Expertise**

- **Table 181.** Ensure that the epidemiologic investigator on the outbreak response team has the necessary skills to plan and conduct epidemiologic studies during an outbreak investigation (e.g. expertise in case interviews, study design, questionnaire development and data analysis).

County Size	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	5 ( 8)	57 (92)	0 (0)	62 (100)
Small	4 (80)	23 (40)	0 (0)	27 ( 44)
Medium	0 ( 0)	13 (23)	0 (0)	13 ( 21)
Large	1 (20)	16 (28)	0 (0)	17 ( 27)
Metro	0 ( 0)	5 ( 9)	0 (0)	5 ( 8)

- **Table 182.** Provide continuing education to the epidemiologic investigator to maintain and improve skills in their specialty.

County Size	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	30 (48)	31 (50)	1 ( 2)	62 (100)
Small	16 (53)	11 (36)	0 ( 0)	27 ( 44)
Medium	5 (17)	8 (26)	0 ( 0)	13 ( 21)
Large	8 (27)	8 (26)	1 (100)	17 ( 27)
Metro	1 ( 3)	4 (13)	0 ( 0)	5 ( 8)

- **Table 183.** Train the epidemiologic investigator in the agency's/jurisdiction's outbreak response protocols and the epidemiologic investigator's role in an investigation.

County Size	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	21 (34)	41 (66)	0 (0)	62 (100)
Small	13 (62)	14 (34)	0 (0)	27 ( 44)
Medium	3 (14)	10 (24)	0 (0)	13 ( 21)
Large	5 (24)	12 (29)	0 (0)	17 ( 27)
Metro	0 ( 0)	5 (12)	0 (0)	5 ( 8)



- **Table 184.** Assemble a reference library with information about foodborne diseases, enteric illnesses and control measures. When possible, include electronic resources that can be accessed during field investigations.

County Size	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	3 ( 5)	59 (95)	0 (0)	62 (100)
Small	1 (33)	26 (44)	0 (0)	27 ( 44)
Medium	1 (33)	12 (20)	0 (0)	13 ( 21)
Large	0 ( 0)	17 (29)	0 (0)	17 ( 27)
Metro	1 (33)	4 ( 7)	0 (0)	5 ( 8)

- **Table 185.** Assemble a list of resource persons who have expertise in specific disease agents and epidemiologic investigation methodologies.

County Size	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	3 ( 5)	59 (95)	0 (0)	62 (100)
Small	2 (67)	25 (42)	0 (0)	27 ( 44)
Medium	0 ( 0)	13 (22)	0 (0)	13 ( 21)
Large	1 (33)	16 (27)	0 (0)	17 ( 27)
Metro	0 ( 0)	5 ( 9)	0 (0)	5 ( 8)

- **Table 186.** Exercise outbreak response team members together to ensure team members understand and can perform their roles and understand the roles and responsibilities of other team members.

County Size	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	28 (45)	34 (55)	0 (0)	62 (100)
Small	14 (50)	13 (38)	0 (0)	27 ( 44)
Medium	3 (11)	10 (29)	0 (0)	13 ( 21)
Large	9 (32)	8 (24)	0 (0)	17 ( 27)
Metro	2 ( 7)	3 ( 9)	0 (0)	5 ( 8)

- **Table 187.** Ensure that all outbreak response team members regularly participate in outbreak investigation and control efforts even if it means working with another jurisdiction because the team's home jurisdiction does not have many outbreaks.

County Size	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	22 (36)	40 (65)	0 (0)	62 (100)
Small	14 (64)	13 (33)	0 (0)	27 ( 44)
Medium	4 (18)	9 (23)	0 (0)	13 ( 21)
Large	3 (14)	14 (35)	0 (0)	17 ( 27)
Metro	1 ( 5)	4 (10)	0 (0)	5 ( 8)

- **Table 188.** If investigations are infrequent, centralize processes that require substantial experience for proficiency (e.g., case interviews study design).

County Size	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	7 (11)	45 (73)	10 (16)	62 (100)
Small	4 (57)	22 (49)	1 (10)	27 ( 44)
Medium	2 (29)	10 (22)	1 (10)	13 ( 21)
Large	0 ( 0)	10 (22)	7 (70)	17 ( 27)
Metro	1 (14)	3 ( 7)	1 (10)	5 ( 8)

**Focus Area 7: Outbreak Investigation**

- **Table 189.** Prepare a written protocol outlining the steps in the epidemiologic investigation of a foodborne disease outbreak.

County Size	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	11 (18)	51 (82)	0 (0)	62 (100)
Small	7 (64)	20 (39)	0 (0)	27 ( 44)
Medium	1 ( 9)	12 (24)	0 (0)	13 ( 21)
Large	2 (18)	15 (29)	0 (0)	17 ( 27)
Metro	1 ( 9)	4 ( 8)	0 (0)	5 ( 8)

- **Table 190.** Have appropriate equipment and supplies ready for use by the epidemiologic investigator when needed.

County Size	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	5 ( 8)	57 (92)	0 (0)	62 (100)
Small	4 (80)	23 (40)	0 (0)	27 ( 44)
Medium	1 (20)	12 (21)	0 (0)	13 ( 21)
Large	0 ( 0)	17 (30)	0 (0)	17 ( 27)
Metro	0 ( 0)	5 ( 9)	0 (0)	5 ( 8)

- **Table 191.** Use standardized forms for collecting exposure information to ensure that pertinent information is collected from all cases.

County Size	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	1 ( 2)	61 (98)	0 (0)	62 (100)
Small	1 (100)	26 (43)	0 (0)	27 ( 44)
Medium	0 ( 0)	13 (21)	0 (0)	13 ( 21)
Large	0 ( 0)	17 (28)	0 (0)	17 ( 27)
Metro	0 ( 0)	5 ( 8)	0 (0)	5 ( 8)

- **Table 192.** Use standardized “core” questions and data elements on data collection forms to enhance data sharing and comparisons across jurisdictions.

County Size	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	1 ( 2)	61 (98)	0 (0)	62 (100)
Small	1 (100)	26 (43)	0 (0)	27 ( 44)
Medium	0 ( 0)	13 (21)	0 (0)	13 ( 21)
Large	0 ( 0)	17 (28)	0 (0)	17 ( 27)
Metro	0 ( 0)	5 ( 8)	0 (0)	5 ( 8)

- **Table 193.** Develop templates for data collection forms before an outbreak occurs.

County Size	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	3 ( 5)	56 (90)	3 ( 5)	62 (100)
Small	1 (33)	23 (42)	3 (100)	27 ( 44)
Medium	1 (33)	12 (21)	0 ( 0)	13 ( 21)
Large	1 (33)	16 (29)	0 ( 0)	17 ( 27)
Metro	0 ( 0)	5 ( 9)	0 ( 0)	5 ( 8)

- **Table 194.** Obtain tools to analyze outbreak data (e.g. Epi Info™, SAS®) before an outbreak occurs.

County Size	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	13 (21)	39 (63)	10 (16)	62 (100)
Small	8 (62)	10 (26)	9 (90)	27 ( 44)
Medium	3 (23)	9 (23)	1 (10)	13 ( 21)
Large	2 (15)	15 (39)	0 ( 0)	17 ( 27)
Metro	0 ( 0)	5 (13)	0 ( 0)	5 ( 8)

- **Table 195.** Ensure that staff are trained to use these tools.

**Note: Evaluation scoring was omitted during electronic CIFOR document creation. As a result, the majority of counties did not fill out this question.**

County Size	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	1 ( 25)	3 (75)	0 (0)	4 (100)
Small	1 (100)	2 (67)	0 (0)	3 ( 75)
Medium	0 ( 0)	0 ( 0)	0 (0)	0 ( 0)
Large	0 ( 0)	0 ( 0)	0 (0)	0 ( 0)
Metro	0 ( 0)	1 (33)	0 (0)	1 ( 25)

\* Missing 58 responses

- **Table 196.** Ensure that appropriate electronic record management procedures are in place during an outbreak investigation including routine data backups, off-site redundant storage and disaster recovery procedures.

County Size	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	7 (11)	55 (89)	0 (0)	62 (100)
Small	3 (43)	24 (44)	0 (0)	27 ( 44)
Medium	0 ( 0)	13 (24)	0 (0)	13 ( 21)
Large	3 (43)	14 (26)	0 (0)	17 ( 27)
Metro	1 (14)	4 ( 7)	0 (0)	5 ( 8)

- **Table 197.** Determine how confidential information will be stored and whether and how it can be shared with others in the outbreak response team.

County Size	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	1 ( 2)	61 (98)	0 (0)	62 (100)
Small	1 (100)	26 (43)	0 (0)	27 ( 44)
Medium	0 ( 0)	13 (21)	0 (0)	13 ( 21)
Large	0 ( 0)	17 (28)	0 (0)	17 ( 27)
Metro	0 ( 0)	5 ( 8)	0 (0)	5 ( 8)

- **Table 198.** Be familiar with and follow state and federal laws and practices that protect confidential information from disclosure.

County Size	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	1 ( 2)	61 (98)	0 (0)	62 (100)
Small	1 (100)	26 (43)	0 (0)	27 ( 44)
Medium	0 ( 0)	13 (21)	0 (0)	13 ( 21)
Large	0 ( 0)	17 (28)	0 (0)	17 ( 27)
Metro	0 ( 0)	5 ( 8)	0 (0)	5 ( 8)

**Focus Area 7: Identify Etiologic Agent (if unknown)**

- **Table 199.** Contact health care providers of cases who have sought medical attention to determine if a diagnosis has been confirmed.

County Size	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	0 (0)	62 (100)	0 (0)	62 (100)
Small	0 (0)	27 ( 44)	0 (0)	27 ( 44)
Medium	0 (0)	13 ( 21)	0 (0)	13 ( 21)
Large	0 (0)	17 ( 27)	0 (0)	17 ( 27)
Metro	0 (0)	5 ( 8)	0 (0)	5 ( 8)

- **Table 200.** Interview cases to characterize symptoms, incubation period, and duration of illness to provide clues to a possible etiology.

County Size	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	0 (0)	62 (100)	0 (0)	62 (100)
Small	0 (0)	27 ( 44)	0 (0)	27 ( 44)
Medium	0 (0)	13 ( 21)	0 (0)	13 ( 21)
Large	0 (0)	17 ( 27)	0 (0)	17 ( 27)
Metro	0 (0)	5 ( 8)	0 (0)	5 ( 8)

- **Table 201.** Obtain stool samples from cases and establish an etiology through laboratory testing.

County Size	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	1 ( 2)	61 (98)	0 (0)	62 (100)
Small	0 ( 0)	27 (44)	0 (0)	27 ( 44)
Medium	0 ( 0)	13 (21)	0 (0)	13 ( 21)
Large	0 ( 0)	17 (28)	0 (0)	17 ( 27)
Metro	1 (100)	4 ( 7)	0 (0)	5 ( 8)

**Focus Area 7: Identify Persons At Risk**

- **Table 202.** Identify additional cases by alerting health care providers, reviewing laboratory reports and medical charts, asking cases if they know of others who are ill, reviewing employee or school absences, reviewing death certificates, surveying the affected population, or asking the public to contact the health department if they have the illness under investigation.

County Size	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	2 ( 3)	60 (97)	0 (0)	62 (100)
Small	2 (100)	25 (42)	0 (0)	27 ( 44)
Medium	0 ( 0)	13 (22)	0 (0)	13 ( 21)
Large	0 ( 0)	17 (28)	0 (0)	17 ( 27)
Metro	0 ( 0)	5 ( 8)	0 (0)	5 ( 8)

- **Table 203.** If an outbreak is related to an event or establishment, obtain a list of persons attending the event or a list of persons patronizing the establishment during the outbreak period.

County Size	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	0 (0)	62 (100)	0 (0)	62 (100)
Small	0 (0)	27 ( 44)	0 (0)	27 ( 44)
Medium	0 (0)	13 ( 21)	0 (0)	13 ( 21)
Large	0 (0)	17 ( 27)	0 (0)	17 ( 27)
Metro	0 (0)	5 ( 8)	0 (0)	5 ( 8)

- **Table 204.** If an outbreak is related to an event or establishment, interview persons who attended the event or patronized the establishment to identify cases and determine attack rates by time.

County Size	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	0 (0)	62 (100)	0 (0)	62 (100)
Small	0 (0)	27 ( 44)	0 (0)	27 ( 44)
Medium	0 (0)	13 ( 21)	0 (0)	13 ( 21)
Large	0 (0)	17 ( 27)	0 (0)	17 ( 27)
Metro	0 (0)	5 ( 8)	0 (0)	5 ( 8)



**Focus Area 7: Identify Mode of Transmission And Vehicle**

- **Table 205.** Establish a case definition based on the etiologic agent and/or clinical characteristics of the illness associated with the outbreak with restrictions by time, place and person.

County Size	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	0 (0)	62 (100)	0 (0)	62 (100)
Small	0 (0)	27 ( 44)	0 (0)	27 ( 44)
Medium	0 (0)	13 ( 21)	0 (0)	13 ( 21)
Large	0 (0)	17 ( 27)	0 (0)	17 ( 27)
Metro	0 (0)	5 ( 8)	0 (0)	5 ( 8)

- **Table 206.** Characterize cases by person, place, and time and evaluate this descriptive epidemiology to identify patterns suggestive of particular food items or diets.

County Size	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	0 (0)	62 (100)	0 (0)	62 (100)
Small	0 (0)	27 ( 44)	0 (0)	27 ( 44)
Medium	0 (0)	13 ( 21)	0 (0)	13 ( 21)
Large	0 (0)	17 ( 27)	0 (0)	17 ( 27)
Metro	0 (0)	5 ( 8)	0 (0)	5 ( 8)

- **Table 207.** Collect exposure histories from patients as soon as possible after they are reported by using techniques to improve food history recall.

County Size	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	0 (0)	62 (100)	0 (0)	62 (100)
Small	0 (0)	27 ( 44)	0 (0)	27 ( 44)
Medium	0 (0)	13 ( 21)	0 (0)	13 ( 21)
Large	0 (0)	17 ( 27)	0 (0)	17 ( 27)
Metro	0 (0)	5 ( 8)	0 (0)	5 ( 8)

- **Table 208.** To improve food history recall, encourage cases to remember what they ate by looking at a calendar for the appropriate period and elaborating on where they ate, with whom, and events associated with the meal.

County Size	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	2 ( 3)	60 (97)	0 (0)	62 (100)
Small	1 (50)	26 (43)	0 (0)	27 ( 44)
Medium	1 (50)	12 (20)	0 (0)	13 ( 21)
Large	0 ( 0)	17 (28)	0 (0)	17 ( 27)
Metro	0 ( 0)	5 ( 8)	0 (0)	5 ( 8)

- **Table 209.** To improve food history recall, enlist the help of those preparing meals for case(s) during the period of interest.

County Size	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	1 ( 2)	60 (97)	1 ( 2)	62 (100)
Small	1 (100)	26 (43)	0 ( 0)	27 ( 44)
Medium	0 ( 0)	13 (22)	0 ( 0)	13 ( 21)
Large	0 ( 0)	16 (27)	1 (100)	17 ( 27)
Metro	0 ( 0)	5 ( 8)	0 ( 0)	5 ( 8)

- **Table 210.** To improve food history recall, obtain cash register or credit card receipts from cases to identify/verify food purchases and places where food was consumed.

County Size	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	3 ( 5)	53 (95)	0 (0)	56 (100)
Small	1 (33)	24 (45)	0 (0)	25 ( 45)
Medium	1 (33)	10 (19)	0 (0)	11 ( 20)
Large	1 (33)	16 (29)	0 (0)	17 ( 30)
Metro	0 ( 0)	3 ( 6)	0 (0)	3 ( 5)

\*Missing 6 responses.

- **Table 211.** To help cases think about all exposures, provide a structured list of places where cases might get food including food pantries, farmers' markets, conference meetings and caterers.

County Size	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	3 ( 5)	56 (90)	3 ( 5)	62 (100)
Small	1 (33)	25 (45)	1 (33)	27 ( 44)
Medium	1 (33)	12 (21)	0 ( 0)	13 ( 21)
Large	1 (33)	15 (27)	1 (33)	17 ( 27)
Metro	0 ( 0)	4 ( 7)	1 (33)	5 ( 8)

- **Table 212.** Work with grocery stores where cases purchased food to obtain shopper card purchase records to identify/verify food purchases.

County Size	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	3 ( 5)	41 (66)	18 (29)	62 (100)
Small	1 (33)	18 (44)	8 (44)	27 ( 44)
Medium	1 (33)	7 (17)	5 (28)	13 ( 21)
Large	1 (33)	12 (29)	4 (22)	17 ( 27)
Metro	0 ( 0)	4 (10)	1 ( 6)	5 ( 8)

- **Table 213.** Document brand names and product code information for prepackaged food items consumed by cases.

County Size	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	2 ( 3)	60 (97)	0 (0)	62 (100)
Small	1 (50)	26 (43)	0 (0)	27 ( 44)
Medium	0 ( 0)	13 (22)	0 (0)	13 ( 21)
Large	1 (50)	16 (27)	0 (0)	17 ( 27)
Metro	0 ( 0)	5 ( 8)	0 (0)	5 ( 8)

- **Table 214.** Explore other sources of information (in addition to interview information from cases) such as product distribution data.

County Size	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	2 ( 3)	57 (92)	3 ( 5)	62 (100)
Small	1 (50)	24 (42)	2 (67)	27 ( 44)
Medium	0 ( 0)	13 (23)	0 ( 0)	13 ( 21)
Large	1 (50)	15 (26)	1 (33)	17 ( 27)
Metro	0 ( 0)	5 ( 9)	0 ( 0)	5 ( 8)

- **Table 215.** If resources are sufficient, interview cases with a detailed exposure history questionnaire as they are reported (i.e. before an outbreak has been recognized).

County Size	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	1 ( 2)	56 (90)	5 ( 8)	62 (100)
Small	0 ( 0)	25 (45)	2 (40)	27 ( 44)
Medium	0 ( 0)	11 (20)	2 (40)	13 ( 21)
Large	1 (100)	15 (27)	1 (20)	17 ( 27)
Metro	0 ( 0)	5 ( 9)	0 ( 0)	5 ( 8)

- **Table 216.** When resources are insufficient to conduct detailed exposure history interviews at the initial report, collect information about limited high-risk exposures associated with the pathogen when the case is reported, followed by a more detailed interview if a cluster is recognized.

County Size	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	0 (0)	57 (92)	5 ( 8)	62 (100)
Small	0 (0)	26 (46)	1 (20)	27 ( 44)
Medium	0 (0)	12 (21)	1 (20)	13 ( 21)
Large	0 (0)	16 (28)	1 (20)	17 ( 27)
Metro	0 (0)	3 ( 5)	2 (40)	5 ( 8)

- **Table 217.** If conducting detailed exposure history interviews with cases only after a cluster is identified, either use the results for hypothesis generation with subsequent testing of those hypotheses in a controlled study or use the detailed exposure history questionnaire on an appropriate set of controls at the same time, thereby combining hypothesis generation and testing.

County Size	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	1 ( 2)	57 (92)	4 ( 7)	62 (100)
Small	1 (100)	25 (44)	1 (25)	27 ( 44)
Medium	0 ( 0)	13 (23)	0 ( 0)	13 ( 21)
Large	0 ( 0)	15 (26)	2 (50)	17 ( 27)
Metro	0 ( 0)	4 ( 7)	1 (25)	5 ( 8)

- **Table 218.** Use a dynamic cluster investigation process to generate hypotheses about an outbreak. Interview initial cases within a cluster using a detailed exposure history questionnaire and systematically re-interview those same cases as new exposures are identified.

County Size	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	2 ( 3)	59 (95)	1 ( 2)	62 (100)
Small	1 (50)	25 (42)	1 (100)	27 ( 44)
Medium	0 ( 0)	13 (22)	0 ( 0)	13 ( 21)
Large	1 (50)	16 (27)	0 ( 0)	17 ( 27)
Metro	0 ( 0)	5 ( 9)	0 ( 0)	5 ( 8)

- **Table 219.** Interview appropriate non-ill persons to obtain exposure information for comparisons in case-control or cohort studies.

County Size	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	1 ( 2)	61 (98)	0 (0)	62 (100)
Small	1 (100)	26 (43)	0 (0)	27 ( 44)
Medium	0 ( 0)	13 (21)	0 (0)	13 ( 21)
Large	0 ( 0)	17 (28)	0 (0)	17 ( 27)
Metro	0 ( 0)	5 ( 8)	0 (0)	5 ( 8)

- **Table 220.** Interview non-outbreak-associated ill persons (i.e. cases with microbial agents other than the agent under investigation from the same time) to obtain exposure information for controls for case-case analytic studies.

County Size	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	2 ( 3)	51 (82)	9 (15)	62 (100)
Small	1 (50)	23 (45)	3 (33)	27 ( 44)
Medium	1 (50)	10 (20)	2 (22)	13 ( 21)
Large	0 ( 0)	13 (26)	4 (44)	17 ( 27)
Metro	0 ( 0)	5 (10)	0 ( 0)	5 ( 8)

- **Table 221.** Compare exposure frequencies among cases against known or estimated background exposure rates such as those found in the “*FoodNet Population Survey Atlas of Exposures, 2006-2009*”.

County Size	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	4 ( 7)	31 (50)	27 (44)	62 (100)
Small	0 ( 0)	16 (52)	11 (41)	27 ( 44)
Medium	1 (25)	5 (16)	7 (26)	13 ( 21)
Large	3 (75)	8 (26)	6 (22)	17 ( 27)
Metro	0 ( 0)	2 ( 7)	3 (11)	5 ( 8)

- **Table 222.** In the absence of survey data or data from a control group, use common sense estimates of the prevalence of a given exposure to identify exposures of interest among cases.

County Size	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	1 ( 2)	48 (77)	13 (21)	62 (100)
Small	0 ( 0)	22 (46)	5 (39)	27 ( 44)
Medium	0 ( 0)	9 (19)	4 (31)	13 ( 21)
Large	1 (100)	13 (27)	3 (23)	17 ( 27)
Metro	0 ( 0)	4 ( 8)	1 ( 8)	5 ( 8)

**Focus Area 7: Determine Potential For Ongoing Transmission**

- **Table 223.** On the basis of the agent, incubation period, and likelihood of secondary spread, create an epidemic curve and evaluate the course of the epidemic to determine whether cases might still be occurring.

County Size	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	0 (0)	61 (98)	1 ( 2)	62 (100)
Small	0 (0)	26 (43)	1 (100)	27 ( 44)
Medium	0 (0)	13 (21)	0 ( 0)	13 ( 21)
Large	0 (0)	17 (28)	0 ( 0)	17 ( 27)
Metro	0 (0)	5 ( 8)	0 ( 0)	5 ( 8)

- **Table 224.** If the outbreak appears to be ongoing, continue surveillance and review potential abatement procedures.

County Size	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	0 (0)	62 (100)	0 (0)	62 (100)
Small	0 (0)	27 ( 44)	0 (0)	27 ( 44)
Medium	0 (0)	13 ( 21)	0 (0)	13 ( 21)
Large	0 (0)	17 ( 27)	0 (0)	17 ( 27)
Metro	0 (0)	5 ( 8)	0 (0)	5 ( 8)

**Focus Area 7: Communication**

- **Table 225.** Ensure that outbreak response team members know each other before an outbreak occurs.

County Size	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	1 ( 2)	61 (98)	0 (0)	62 (100)
Small	0 ( 0)	27 (44)	0 (0)	27 ( 44)
Medium	0 ( 0)	13 (21)	0 (0)	13 ( 21)
Large	0 ( 0)	17 (28)	0 (0)	17 ( 27)
Metro	1 (100)	4 ( 7)	0 (0)	5 ( 8)

- **Table 226.** Establish and use routine procedures for communicating among outbreak response team members and their organizational units before an outbreak occurs.

County Size	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	2 ( 3)	60 (97)	0 (0)	62 (100)
Small	1 (50)	26 (43)	0 (0)	27 ( 44)
Medium	0 ( 0)	13 (22)	0 (0)	13 ( 21)
Large	0 ( 0)	17 (28)	0 (0)	17 ( 27)
Metro	1 (50)	4 ( 7)	0 (0)	5 ( 8)

- **Table 227.** Maintain close communication and coordination among members of the outbreak response team during an investigation.

County Size	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	1 ( 2)	61 (98)	0 (0)	62 (100)
Small	1 (100)	26 (43)	0 (0)	27 ( 44)
Medium	0 ( 0)	13 (21)	0 (0)	13 ( 21)
Large	0 ( 0)	17 (28)	0 (0)	17 ( 27)
Metro	0 ( 0)	5 ( 8)	0 (0)	5 ( 8)



- **Table 228.** Communicate actions taken and new outbreak information to all members of the outbreak response team in a timely manner.

County Size	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	2 ( 3)	60 (97)	0 (0)	62 (100)
Small	1 (50)	26 (43)	0 (0)	27 ( 44)
Medium	0 ( 0)	13 (22)	0 (0)	13 ( 21)
Large	1 (50)	16 (27)	0 (0)	17 ( 27)
Metro	0 ( 0)	5 ( 8)	0 (0)	5 ( 8)

- **Table 229.** Participate in daily meetings with the outbreak response team to update the entire team. Make sure suspicious new exposures are adequately considered by all team members.

County Size	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	4 ( 7)	57 (92)	1 ( 2)	62 (100)
Small	0 ( 0)	26 (46)	1 (100)	27 ( 44)
Medium	1 (25)	12 (21)	0 ( 0)	13 ( 21)
Large	1 (25)	16 (28)	0 ( 0)	17 ( 27)
Metro	2 (50)	3 ( 5)	0 ( 0)	5 ( 8)

- **Table 230.** Submit preliminary reports of outbreaks to CDC's National Outbreak Reporting System while the investigation is ongoing to identify potentially related outbreaks occurring in multiple places and facilitate further investigation of the outbreaks.

County Size	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	1 ( 2)	28 (45)	33 (53)	62 (100)
Small	1 (100)	10 (36)	16 (49)	27 ( 44)
Medium	0 ( 0)	5 (18)	8 (24)	13 ( 21)
Large	0 ( 0)	8 (29)	9 (27)	17 ( 27)
Metro	0 ( 0)	5 (18)	0 ( 0)	5 ( 8)

**Focus Area 7: Making Changes**

- **Table 231.** Participate in a debriefing following each outbreak investigation with all members of the outbreak response team to identify lessons learned and compare notes on ultimate findings. Identify factors that compromised the investigation and clarify changes to procedures, resources, training and agency structure to optimize future investigations.

County Size	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	32 (52)	30 (48)	0 (0)	62 (100)
Small	11 (34)	16 (53)	0 (0)	27 ( 44)
Medium	5 (16)	8 (27)	0 (0)	13 ( 21)
Large	14 (44)	3 (10)	0 (0)	17 ( 27)
Metro	2 ( 6)	3 (10)	0 (0)	5 ( 8)

- **Table 232.** Summarize investigation findings, conclusions, and recommendations in a written report consistent with the size and complexity of the investigation, including lessons learned and action items for follow-up and quality improvement.

County Size	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	4 ( 7)	52 (84)	6 ( 10)	62 (100)
Small	4 (100)	17 (33)	6 (100)	27 ( 44)
Medium	0 ( 0)	13 (25)	0 ( 0)	13 ( 21)
Large	0 ( 0)	17 (33)	0 ( 0)	17 ( 27)
Metro	0 ( 0)	5 (10)	0 ( 0)	5 ( 8)

## Appendix C: Regional Detailed Analysis

### Focus Area 2: Outbreak Response Team

- **Table 233.** Determine the composition of the outbreak response team before an outbreak occurs.

Regional Environmental Epidemiologist Region	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	4 ( 7)	58 (94)	0 (0)	62 (100)
Northwest	0 ( 0)	17 (29)	0 (0)	17 ( 27)
Northeast	2 (50)	12 (21)	0 (0)	14 ( 23)
West Central	0 ( 0)	8 (14)	0 (0)	8 ( 13)
East Central	1 (25)	6 (10)	0 (0)	7 ( 11)
Southeast	0 ( 0)	5 ( 9)	0 (0)	5 ( 8)
Southwest	0 ( 0)	9 (16)	0 (0)	9 ( 15)
South	1 (25)	1 ( 2)	0 (0)	2 ( 3)

- **Table 234.** Use teams that include expertise in epidemiology, environmental health, the laboratory, health education, and risk communication to respond to outbreaks. Members may come from different programs within an agency or different agencies.

Regional Environmental Epidemiologist Region	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	4 ( 7)	58 (94)	0 (0)	62 (100)
Northwest	0 ( 0)	17 (29)	0 (0)	17 ( 27)
Northeast	4 (100)	10 (17)	0 (0)	14 ( 23)
West Central	0 ( 0)	8 (14)	0 (0)	8 ( 13)
East Central	0 ( 0)	7 (12)	0 (0)	7 ( 11)
Southeast	0 ( 0)	5 ( 9)	0 (0)	5 ( 8)
Southwest	0 ( 0)	9 (16)	0 (0)	9 ( 15)
South	0 ( 0)	2 ( 5)	0 (0)	2 ( 3)

- **Table 235.** Designate a team leader to help set and enforce investigation priorities, coordinate activities associated with the investigation, and communicate with agency decision makers and other agencies and organizations.

Regional Environmental Epidemiologist Region	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	2 ( 3)	60 (97)	0 (0)	62 (100)
Northwest	0 ( 0)	17 (28)	0 (0)	17 ( 27)
Northeast	1 (50)	13 (22)	0 (0)	14 ( 23)
West Central	0 ( 0)	8 (13)	0 (0)	8 ( 13)
East Central	0 ( 0)	7 (12)	0 (0)	7 ( 11)
Southeast	0 ( 0)	5 ( 8)	0 (0)	5 ( 8)
Southwest	0 ( 0)	9 (15)	0 (0)	9 ( 15)
South	1 (50)	1 ( 2)	0 (0)	2 ( 3)

- **Table 236.** Recruit additional team members with other areas of expertise depending on the unique characteristics of each outbreak.

Regional Environmental Epidemiologist Region	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	4 ( 7)	58 (94)	0 (0)	62 (100)
Northwest	0 ( 0)	17 (29)	0 (0)	17 ( 27)
Northeast	4 (100)	10 (17)	0 (0)	14 ( 23)
West Central	0 ( 0)	8 (14)	0 (0)	8 ( 13)
East Central	0 ( 0)	7 (12)	0 (0)	7 ( 11)
Southeast	0 ( 0)	5 ( 9)	0 (0)	5 ( 8)
Southwest	0 ( 0)	9 (16)	0 (0)	9 ( 15)
South	0 ( 0)	2 ( 4)	0 (0)	2 ( 3)

- **Table 237.** Establish a dedicated emergency response unit if the population is large enough and the number of foodborne disease outbreaks is high enough.

Regional Environmental Epidemiologist Region	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	8 (13)	50 (81)	4 ( 7)	62 (100)
Northwest	2 (29)	14 (28)	1 (25)	17 ( 27)
Northeast	3 (43)	9 (18)	2 (50)	14 ( 23)
West Central	1 (14)	7 (14)	0 ( 0)	8 ( 13)
East Central	1 (14)	6 (12)	0 ( 0)	7 ( 11)
Southeast	0 ( 0)	5 (10)	0 ( 0)	5 ( 8)
Southwest	0 ( 0)	9 (18)	0 ( 0)	9 ( 15)
South	0 ( 0)	1 ( 2)	1 (25)	2 ( 3)

- **Table 238.** Ensure that members of the outbreak response team know each other.

Regional Environmental Epidemiologist Region	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	4 ( 7)	58 (94)	0 (0)	62 (100)
Northwest	0 ( 0)	17 (29)	0 (0)	17 ( 27)
Northeast	1 (25)	13 (22)	0 (0)	14 ( 23)
West Central	0 ( 0)	8 (14)	0 (0)	8 ( 13)
East Central	2 (25)	5 ( 9)	0 (0)	7 ( 11)
Southeast	0 ( 0)	5 ( 9)	0 (0)	5 ( 8)
Southwest	0 ( 0)	9 (15)	0 (0)	9 ( 15)
South	1 (25)	1 ( 2)	0 (0)	2 ( 3)

- **Table 239.** Ensure all outbreak response team members have a common understanding that the primary goal for outbreak response is to implement control measures as quickly as possible to prevent illness.

Regional Environmental Epidemiologist Region	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	3 ( 5)	59 (95)	0 (0)	62 (100)
Northwest	0 ( 0)	17 (29)	0 (0)	17 ( 27)
Northeast	2 (67)	12 (20)	0 (0)	14 ( 23)
West Central	1 (33)	7 (12)	0 (0)	8 ( 13)
East Central	0 ( 0)	7 (12)	0 (0)	7 ( 11)
Southeast	0 ( 0)	5 ( 9)	0 (0)	5 ( 8)
Southwest	0 ( 0)	9 (15)	0 (0)	9 ( 15)
South	0 ( 0)	2 ( 3)	0 (0)	2 ( 3)

- **Table 240.** Pre-assign specific tasks to team members based on their knowledge and skills before an outbreak occurs.

Regional Environmental Epidemiologist Region	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	7 (11)	54 (87)	1 ( 2)	62 (100)
Northwest	1 (14)	16 (30)	0 ( 0)	17 ( 27)
Northeast	3 (43)	10 (19)	1 (100)	14 ( 23)
West Central	0 ( 0)	8 (15)	0 ( 0)	8 ( 13)
East Central	1 (14)	6 (11)	0 ( 0)	7 ( 11)
Southeast	0 ( 0)	5 ( 9)	0 ( 0)	5 ( 8)
Southwest	0 ( 0)	9 (17)	0 ( 0)	9 ( 15)
South	2 (29)	0 ( 0)	0 ( 0)	2 ( 3)

- **Table 241.** Ensure that team members (and other professional staff) understand the laws and legal authority needed to conduct an outbreak response and can demonstrate competence in applying those laws and legal authorities.

Regional Environmental Epidemiologist Region	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	15 (24)	47 (76)	0 (0)	62 (100)
Northwest	7 (47)	10 (21)	0 (0)	17 ( 27)
Northeast	5 (33)	9 (19)	0 (0)	14 ( 23)
West Central	0 ( 0)	8 (17)	0 (0)	8 ( 13)
East Central	1 ( 7)	6 (13)	0 (0)	7 ( 11)
Southeast	0 ( 0)	5 (11)	0 (0)	5 ( 8)
Southwest	0 ( 0)	9 (19)	0 (0)	9 ( 15)
South	2 (13)	0 ( 0)	0 (0)	2 ( 3)

- **Table 242.** Provide continuing education to members of the outbreak response team so that they can maintain and improve skills in their specialty.

Regional Environmental Epidemiologist Region	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	38 (61)	24 (39)	0 (0)	62 (100)
Northwest	14 (37)	3 (13)	0 (0)	17 ( 27)
Northeast	11 (29)	3 (13)	0 (0)	14 ( 23)
West Central	6 (16)	2 ( 8)	0 (0)	8 ( 13)
East Central	0 ( 0)	7 (29)	0 (0)	7 ( 11)
Southeast	2 ( 5)	3 (13)	0 (0)	5 ( 8)
Southwest	3 ( 8)	6 (25)	0 (0)	9 ( 15)
South	2 ( 5)	0 ( 0)	0 (0)	2 ( 3)

- **Table 243.** Train members of the outbreak response team in the agency's outbreak response protocol and the member's team role.

Regional Environmental Epidemiologist Region	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	33 (53)	29 (47)	0 (0)	62 (100)
Northwest	14 (42)	3 (10)	0 (0)	17 ( 27)
Northeast	8 (24)	6 (21)	0 (0)	14 ( 23)
West Central	2 ( 6)	6 (21)	0 (0)	8 ( 13)
East Central	3 ( 9)	4 (14)	0 (0)	7 ( 11)
Southeast	1 ( 3)	4 (14)	0 (0)	5 ( 8)
Southwest	3 ( 9)	6 (21)	0 (0)	9 ( 15)
South	2 ( 6)	0 ( 0)	0 (0)	2 ( 3)

- **Table 244.** Exercise outbreak response team members together to identify gaps in resources and likely problem areas, ensure that team members can perform their assigned roles in outbreak response and can understand the roles and responsibilities of other team members.

Regional Environmental Epidemiologist Region	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	35 (57)	26 (42)	0 (0)	62 (100)
Northwest	14 (40)	3 (12)	0 (0)	17 ( 27)
Northeast	7 (20)	7 (27)	0 (0)	14 ( 23)
West Central	4 (11)	4 (15)	0 (0)	8 ( 13)
East Central	3 ( 9)	4 (15)	0 (0)	7 ( 11)
Southeast	0 ( 0)	5 (19)	0 (0)	5 ( 8)
Southwest	5 (14)	3 (12)	0 (0)	9 ( 15)
South	2 ( 6)	0 ( 0)	0 (0)	2 ( 3)

- **Table 245.** Ensure that all team members regularly participate in outbreak investigation and control efforts even if it means working with another jurisdiction because the team's home jurisdiction does not have many outbreaks.

Regional Environmental Epidemiologist Region	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	18 (29)	41 (66)	3 ( 5)	62 (100)
Northwest	4 (22)	13 (32)	0 ( 0)	17 ( 27)
Northeast	5 (28)	9 (22)	0 ( 0)	14 ( 23)
West Central	4 (22)	4 (10)	0 ( 0)	8 ( 13)
East Central	0 ( 0)	7 (17)	0 ( 0)	7 ( 11)
Southeast	0 ( 0)	5 (12)	0 ( 0)	5 ( 8)
Southwest	3 (17)	3 ( 7)	3 (100)	9 ( 15)
South	2 (11)	0 ( 0)	0 ( 0)	2 ( 3)

- **Table 246.** Have support personnel available to make phone calls, answer incoming calls from concerned members of the public, enter data into a database, copy paperwork, and perform other administrative work to assist the outbreak response team.

Regional Environmental Epidemiologist Region	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	6 (10)	55 (89)	1 ( 2)	62 (100)
Northwest	1 (17)	15 (27)	1 (100)	17 ( 27)
Northeast	4 (67)	10 (18)	0 ( 0)	14 ( 23)
West Central	0 ( 0)	8 (15)	0 ( 0)	8 ( 13)
East Central	0 ( 0)	7 (13)	0 ( 0)	7 ( 11)
Southeast	0 ( 0)	5 ( 9)	0 ( 0)	5 ( 8)
Southwest	1 (17)	8 (15)	0 ( 0)	9 ( 15)
South	0 ( 0)	2 ( 4)	0 ( 0)	2 ( 3)



- **Table 247.** Have legal counsel available to prepare public health orders review and recommend revisions in agency procedures and control measures, and address other legal concerns.

Regional Environmental Epidemiologist Region	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	1 ( 2)	61 (98)	0 (0)	62 (100)
Northwest	1 (100)	16 (26)	0 (0)	17 ( 27)
Northeast	0 ( 0)	14 (23)	0 (0)	14 ( 23)
West Central	0 ( 0)	8 (13)	0 (0)	8 ( 13)
East Central	0 ( 0)	7 (12)	0 (0)	7 ( 11)
Southeast	0 ( 0)	5 ( 8)	0 (0)	5 ( 8)
Southwest	0 ( 0)	9 (15)	0 (0)	9 ( 15)
South	0 ( 0)	2 ( 3)	0 (0)	2 ( 3)

- **Table 248.** Keep appropriate equipment and supplies ready for use by the outbreak response team at any time.

Regional Environmental Epidemiologist Region	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	6 (10)	56 (90)	0 (0)	62 (100)
Northwest	1 (17)	16 (29)	0 (0)	17 ( 27)
Northeast	2 (29)	12 (21)	0 (0)	14 ( 23)
West Central	1 (17)	7 (13)	0 (0)	8 ( 13)
East Central	0 ( 0)	7 (13)	0 (0)	7 ( 11)
Southeast	0 ( 0)	5 ( 9)	0 (0)	5 ( 8)
Southwest	1 (17)	8 (14)	0 (0)	9 ( 15)
South	1 (17)	1 ( 2)	0 (0)	2 ( 3)

- **Table 249.** Review supplies regularly (at least twice a year and preferably quarterly) and replace missing or expired materials.

Regional Environmental Epidemiologist Region	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	31 (50)	31 (50)	0 (0)	62 (100)
Northwest	12 (39)	5 (16)	0 (0)	17 ( 27)
Northeast	4 (13)	10 (32)	0 (0)	14 ( 23)
West Central	3 (10)	5 (16)	0 (0)	8 ( 13)
East Central	2 ( 7)	5 (16)	0 (0)	7 ( 11)
Southeast	1 ( 3)	4 (13)	0 (0)	5 ( 8)
Southwest	7 (23)	2 ( 7)	0 (0)	9 ( 15)
South	2 ( 7)	0 ( 0)	0 (0)	2 ( 3)

- **Table 250.** Identify standardized outbreak-related forms (e.g., case questionnaires, environmental health assessment forms, laboratory test requisition forms) before an outbreak occurs.

Regional Environmental Epidemiologist Region	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	7 (11)	55 (89)	0 (0)	62 (100)
Northwest	0 ( 0)	17 (31)	0 (0)	17 ( 27)
Northeast	5 (71)	9 (16)	0 (0)	14 ( 23)
West Central	1 (14)	7 (13)	0 (0)	8 ( 13)
East Central	1 (14)	6 (11)	0 (0)	7 ( 11)
Southeast	0 ( 0)	5 ( 9)	0 (0)	5 ( 8)
Southwest	0 ( 0)	9 (16)	0 (0)	9 ( 15)
South	0 ( 0)	2 ( 4)	0 (0)	2 ( 3)

- **Table 251.** Train staff in the use of these standardized forms to ensure proper completion by all members of the investigation team.

Regional Environmental Epidemiologist Region	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	17 (27)	45 (73)	0 (0)	62 (100)
Northwest	3 (18)	14 (31)	0 (0)	17 ( 27)
Northeast	6 (35)	8 (18)	0 (0)	14 ( 23)
West Central	4 (24)	4 ( 9)	0 (0)	8 ( 13)
East Central	2 (12)	5 (11)	0 (0)	7 ( 11)
Southeast	0 ( 0)	5 (11)	0 (0)	5 ( 8)
Southwest	1 ( 6)	8 (18)	0 (0)	9 ( 15)
South	1 ( 6)	1 ( 2)	0 (0)	2 ( 3)

- **Table 252.** Obtain tools to analyze outbreak data (e.g., Epi Info™, SAS®) before an outbreak occurs.

Regional Environmental Epidemiologist Region	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	14 (23)	36 (58)	12 (19)	62 (100)
Northwest	2 (14)	5 (14)	10 (83)	17 ( 27)
Northeast	8 (57)	5 (14)	1 ( 8)	14 ( 23)
West Central	0 ( 0)	7 (19)	1 ( 8)	8 ( 13)
East Central	2 (14)	5 (14)	0 ( 0)	7 ( 11)
Southeast	0 ( 0)	5 (14)	0 ( 0)	5 ( 8)
Southwest	2 (14)	7 (19)	0 ( 0)	9 ( 15)
South	0 ( 0)	2 ( 6)	0 ( 0)	2 ( 3)

- **Table 253.** Ensure that staff are trained to use these tools.

Regional Environmental Epidemiologist Region	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	20 (32)	29 (47)	13 (21)	62 (100)
Northwest	3 (15)	3 (10)	11 (85)	17 ( 27)
Northeast	9 (45)	4 (14)	1 ( 8)	14 ( 23)
West Central	0 ( 0)	7 (24)	1 ( 8)	8 ( 13)
East Central	4 (20)	3 (10)	0 ( 0)	7 ( 11)
Southeast	0 ( 0)	5 (17)	0 ( 0)	5 ( 8)
Southwest	2 (10)	7 (24)	0 ( 0)	9 ( 15)
South	2 (10)	0 ( 0)	0 ( 0)	2 ( 3)

- **Table 254.** Assemble a reference library with information about foodborne diseases, enteric illnesses and control measures. When possible, include electronic resources that can be accessed during field investigations.

Regional Environmental Epidemiologist Region	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	5 ( 8)	57 (92)	0 (0)	62 (100)
Northwest	1 (20)	16 (28)	0 (0)	17 ( 27)
Northeast	3 (60)	11 (19)	0 (0)	14 ( 23)
West Central	0 ( 0)	8 (14)	0 (0)	8 ( 13)
East Central	0 ( 0)	7 (12)	0 (0)	7 ( 11)
Southeast	0 ( 0)	5 ( 9)	0 (0)	5 ( 8)
Southwest	0 ( 0)	9 (16)	0 (0)	9 ( 15)
South	1 (20)	1 ( 2)	0 (0)	2 ( 3)

- **Table 255.** Assemble a list of resource persons who have expertise in specific disease agents and investigation methodologies.

Regional Environmental Epidemiologist Region	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	4 ( 7)	58 (94)	0 (0)	62 (100)
Northwest	0 ( 0)	17 (29)	0 (0)	17 ( 27)
Northeast	3 (75)	11 (19)	0 (0)	14 ( 23)
West Central	0 ( 0)	8 (14)	0 (0)	8 ( 13)
East Central	0 ( 0)	7 (12)	0 (0)	7 ( 11)
Southeast	0 ( 0)	5 ( 9)	0 (0)	5 ( 8)
Southwest	0 ( 0)	9 (16)	0 (0)	9 ( 15)
South	1 (25)	1 ( 2)	0 (0)	2 ( 3)

**Focus Area 2: Surge Capacity**

- **Table 256.** Identify persons who can conduct interviews and provide other support to the outbreak response team during large-scale outbreaks.

Regional Environmental Epidemiologist Region	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	5 ( 8)	57 (92)	0 (0)	62 (100)
Northwest	0 ( 0)	17 (30)	0 (0)	17 ( 27)
Northeast	5 (100)	9 (16)	0 (0)	14 ( 23)
West Central	0 ( 0)	8 (14)	0 (0)	8 ( 13)
East Central	0 ( 0)	7 (12)	0 (0)	7 ( 11)
Southeast	0 ( 0)	5 ( 9)	0 (0)	5 ( 8)
Southwest	0 ( 0)	9 (16)	0 (0)	9 ( 15)
South	0 ( 0)	2 ( 4)	0 (0)	2 ( 3)

- **Table 257.** Develop a contact list and protocol for contacting these persons when needed including after-hours contact information.

Regional Environmental Epidemiologist Region	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	2 ( 3)	60 (97)	0 (0)	62 (100)
Northwest	0 ( 0)	17 (28)	0 (0)	17 ( 27)
Northeast	1 (50)	13 (22)	0 (0)	14 ( 23)
West Central	1 (50)	7 (11)	0 (0)	8 ( 13)
East Central	0 ( 0)	7 (11)	0 (0)	7 ( 11)
Southeast	0 ( 0)	5 ( 8)	0 (0)	5 ( 8)
Southwest	0 ( 0)	9 (15)	0 (0)	9 ( 15)
South	0 ( 0)	2 ( 3)	0 (0)	2 ( 3)

- **Table 258.** Develop job description(s) for these persons.

Regional Environmental Epidemiologist Region	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	15 (24)	46 (74)	1 (100)	62 (100)
Northwest	4 (27)	13 (28)	0 ( 0)	17 ( 27)
Northeast	6 (40)	7 (15)	1 (100)	14 ( 23)
West Central	1 ( 7)	7 (15)	0 ( 0)	8 ( 13)
East Central	1 ( 7)	6 (13)	0 ( 0)	7 ( 11)
Southeast	0 ( 0)	5 (11)	0 ( 0)	5 ( 8)
Southwest	4 (27)	5 (11)	0 ( 0)	9 ( 15)
South	0 ( 0)	2 ( 4)	0 ( 0)	2 ( 3)

- **Table 259.** Develop and provide training for these persons.

Regional Environmental Epidemiologist Region	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	23 (37)	39 (63)	0 (0)	62 (100)
Northwest	5 (22)	12 (31)	0 (0)	17 ( 27)
Northeast	9 (39)	5 (13)	0 (0)	14 ( 23)
West Central	2 ( 9)	6 (15)	0 (0)	8 ( 13)
East Central	0 ( 0)	7 (18)	0 (0)	7 ( 11)
Southeast	0 ( 0)	5 (13)	0 (0)	5 ( 8)
Southwest	5 (22)	4 (10)	0 (0)	9 ( 15)
South	2 ( 9)	0 ( 0)	0 (0)	2 ( 3)

- **Table 260.** Periodically involve agency staff who might be needed in non-foodborne disease outbreak investigations in foodborne disease outbreak response to assist in preparations for future investigations and to augment foodborne disease response resources when needed.

Regional Environmental Epidemiologist Region	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	12 (19)	44 (71)	6 (10)	62 (100)
Northwest	4 (33)	10 (23)	3 (50)	17 ( 27)
Northeast	3 (25)	11 (25)	0 ( 0)	14 ( 23)
West Central	3 (25)	5 (11)	0 ( 0)	8 ( 13)
East Central	0 ( 0)	7 (16)	0 ( 0)	7 ( 11)
Southeast	0 ( 0)	5 (11)	0 ( 0)	5 ( 8)
Southwest	1 ( 8)	5 (11)	3 (50)	9 ( 15)
South	1 ( 8)	1 ( 2)	0 ( 0)	2 ( 3)

- **Table 261.** Develop processes for requesting help from other agencies in the response to an outbreak.

Regional Environmental Epidemiologist Region	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	5 ( 8)	55 (89)	2 ( 3)	62 (100)
Northwest	0 ( 0)	17 (31)	0 ( 0)	17 ( 27)
Northeast	3 (60)	11 (20)	0 ( 0)	14 ( 23)
West Central	0 ( 0)	8 (15)	0 ( 0)	8 ( 13)
East Central	1 (20)	6 (11)	0 ( 0)	7 ( 11)
Southeast	0 ( 0)	5 ( 9)	0 ( 0)	5 ( 8)
Southwest	0 ( 0)	7 (13)	2 (100)	9 ( 15)
South	1 (20)	1 ( 2)	0 ( 0)	2 ( 3)

- **Table 262.** Ask for help in responding to an outbreak earlier rather than later – when the scale of the outbreak seems likely to overwhelm agency resources, when it is known or suspected to be multijurisdictional or to be associated with a commercially distributed product, or when the nature of the outbreak or response is beyond the experience of agency staff.

Regional Environmental Epidemiologist Region	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	1 ( 2)	61 (98)	0 (0)	62 (100)
Northwest	0 ( 0)	17 (28)	0 (0)	17 ( 27)
Northeast	1 (100)	13 (21)	0 (0)	14 ( 23)
West Central	0 ( 0)	8 (13)	0 (0)	8 ( 13)
East Central	0 ( 0)	7 (12)	0 (0)	7 ( 11)
Southeast	0 ( 0)	5 ( 8)	0 (0)	5 ( 8)
Southwest	0 ( 0)	9 (15)	0 (0)	9 ( 15)
South	0 ( 0)	2 ( 3)	0 (0)	2 ( 3)

- **Table 263.** Ensure that all key staff know the steps necessary in asking for help.

Regional Environmental Epidemiologist Region	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	2 ( 3)	60 (97)	0 (0)	62 (100)
Northwest	0 ( 0)	17 (28)	0 (0)	17 ( 27)
Northeast	1 (50)	13 (22)	0 (0)	14 ( 23)
West Central	0 ( 0)	8 (13)	0 (0)	8 ( 13)
East Central	0 ( 0)	7 (12)	0 (0)	7 ( 11)
Southeast	0 ( 0)	5 ( 8)	0 (0)	5 ( 8)
Southwest	0 ( 0)	9 (15)	0 (0)	9 ( 15)
South	1 (50)	1 ( 2)	0 (0)	2 ( 3)

- **Table 264.** When asking for help, be prepared to share as much information about the outbreak as possible, including the setting of the outbreak, the population at risk, the suspected etiologic agent, the suspected source and the agencies involved.

Regional Environmental Epidemiologist Region	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	1 ( 2)	61 (98)	0 (0)	62 (100)
Northwest	0 ( 0)	17 (28)	0 (0)	17 ( 27)
Northeast	1 (100)	13 (21)	0 (0)	14 ( 23)
West Central	0 ( 0)	8 (13)	0 (0)	8 ( 13)
East Central	0 ( 0)	7 (12)	0 (0)	7 ( 11)
Southeast	0 ( 0)	5 ( 8)	0 (0)	5 ( 8)
Southwest	0 ( 0)	9 (15)	0 (0)	9 ( 15)
South	0 ( 0)	2 ( 3)	0 (0)	2 ( 3)



**Focus Area 2: Making Changes**

- **Table 265.** Conduct a debriefing among members of the outbreak response team and other investigators following each outbreak to identify lessons learned.

Regional Environmental Epidemiologist Region	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	33 (53)	29 (47)	0 (0)	62 (100)
Northwest	9 (27)	8 (28)	0 (0)	17 ( 27)
Northeast	6 (18)	8 (28)	0 (0)	14 ( 23)
West Central	5 (15)	3 (10)	0 (0)	8 ( 13)
East Central	4 (12)	3 (10)	0 (0)	7 ( 11)
Southeast	1 ( 3)	4 (14)	0 (0)	5 ( 8)
Southwest	7 (21)	2 ( 7)	0 (0)	9 ( 15)
South	1 ( 3)	1 ( 4)	0 (0)	2 ( 3)

- **Table 266.** Refine agency outbreak response preparation and planning (e.g. available resources) based on the lessons learned.

Regional Environmental Epidemiologist Region	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	23 (37)	39 (63)	0 (0)	62 (100)
Northwest	4 (17)	13 (33)	0 (0)	17 ( 27)
Northeast	7 (30)	7 (21)	0 (0)	14 ( 23)
West Central	1 ( 4)	7 (21)	0 (0)	8 ( 13)
East Central	2 ( 9)	5 (13)	0 (0)	7 ( 11)
Southeast	1 ( 4)	4 (10)	0 (0)	5 ( 8)
Southwest	6 (26)	3 ( 8)	0 (0)	9 ( 15)
South	2 ( 9)	0 ( 0)	0 (0)	2 ( 3)

**Focus Area 4: Soliciting and Receiving Reports**

- **Table 267.** Establish a formal system for receiving reports about possible foodborne illness from the public.

Regional Environmental Epidemiologist Region	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	4 (7)	58 (94)	0 (0)	62 (100)
Northwest	1 (25)	16 (28)	0 (0)	17 ( 27)
Northeast	2 (50)	12 (21)	0 (0)	14 ( 23)
West Central	0 ( 0)	8 (14)	0 (0)	8 ( 13)
East Central	0 ( 0)	7 (12)	0 (0)	7 ( 11)
Southeast	0 ( 0)	5 ( 9)	0 (0)	5 ( 8)
Southwest	0 ( 0)	9 (16)	0 (0)	9 ( 15)
South	1 (25)	1 ( 2)	0 (0)	2 ( 3)

- **Table 268.** To increase reporting, make the reporting process as simple as possible for the public.

Regional Environmental Epidemiologist Region	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	5 ( 8)	57 (92)	0 (0)	62 (100)
Northwest	0 ( 0)	17 (30)	0 (0)	17 ( 27)
Northeast	1 (20)	13 (23)	0 (0)	14 ( 23)
West Central	0 ( 0)	8 (14)	0 (0)	8 ( 13)
East Central	0 ( 0)	7 (12)	0 (0)	7 ( 11)
Southeast	0 ( 0)	5 ( 9)	0 (0)	5 ( 8)
Southwest	3 (60)	6 (11)	0 (0)	9 ( 15)
South	1 (20)	1 ( 2)	0 (0)	2 ( 3)

- **Table 269.** Use one 24/7 toll-free telephone number or website address that can be remembered easily or found in the telephone directory.

Regional Environmental Epidemiologist Region	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	9 (15)	51 (82)	2 ( 3)	62 (100)
Northwest	2 (22)	15 (29)	0 ( 0)	17 ( 27)
Northeast	1 (11)	12 (24)	1 (50)	14 ( 23)
West Central	0 ( 0)	8 (16)	0 ( 0)	8 ( 13)
East Central	1 (11)	6 (12)	0 ( 0)	7 ( 11)
Southeast	0 ( 0)	4 ( 8)	1 (50)	5 ( 8)
Southwest	3 (33)	6 (12)	0 ( 0)	9 ( 15)
South	2 (22)	0 ( 0)	0 ( 0)	2 ( 3)

- **Table 270.** Routinely distribute press releases regarding food safety that include the telephone number or website address for reporting to encourage reporting by the public.

Regional Environmental Epidemiologist Region	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	18 (29)	33 (53)	11 (18)	62 (100)
Northwest	8 (44)	3 ( 9)	6 (55)	17 ( 27)
Northeast	5 (28)	9 (27)	0 ( 0)	14 ( 23)
West Central	1 ( 6)	6 (18)	1 ( 9)	8 ( 13)
East Central	2 (11)	4 (12)	1 ( 9)	7 ( 11)
Southeast	0 ( 0)	4 (12)	1 ( 9)	5 ( 8)
Southwest	1 ( 6)	6 (18)	2 (18)	9 ( 15)
South	1 ( 6)	1 ( 3)	0 ( 0)	2 ( 3)

- **Table 271.** Use a standard process to collect information from individuals reporting a possible foodborne illness including use of a standard interview form that solicits information on both food and nonfood exposures.

Regional Environmental Epidemiologist Region	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	1 ( 2)	61 (98)	0 (0)	62 (100)
Northwest	0 ( 0)	17 (28)	0 (0)	17 ( 27)
Northeast	1 (100)	13 (21)	0 (0)	14 ( 23)
West Central	0 ( 0)	9 (15)	0 (0)	8 ( 13)
East Central	0 ( 0)	7 (12)	0 (0)	7 ( 11)
Southeast	0 ( 0)	5 ( 8)	0 (0)	5 ( 8)
Southwest	0 ( 0)	9 (15)	0 (0)	9 ( 15)
South	0 ( 0)	2 ( 3)	0 (0)	2 ( 3)

- **Table 272.** Collect as much information as possible during the initial report.

Regional Environmental Epidemiologist Region	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	3 ( 5)	59 (95)	0 (0)	62 (100)
Northwest	0 ( 0)	17 (29)	0 (0)	17 ( 27)
Northeast	1 (33)	13 (22)	0 (0)	14 ( 23)
West Central	0 ( 0)	8 (14)	0 (0)	8 ( 13)
East Central	0 ( 0)	7 (12)	0 (0)	7 ( 11)
Southeast	1 (33)	4 ( 7)	0 (0)	5 ( 8)
Southwest	0 ( 0)	9 (15)	0 (0)	9 ( 15)
South	1 (33)	1 ( 2)	0 (0)	2 ( 3)

- **Table 273.** For individual complaints, collect a detailed exposure history for the 5 days before onset of illness. If norovirus is suspected, collect an exposure history for the 24 to 48 hours before onset of illness.

Regional Environmental Epidemiologist Region	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	6 (10)	49 (79)	7 (11)	62 (100)
Northwest	0 ( 0)	17 (35)	0 ( 0)	17 ( 27)
Northeast	1 (17)	13 (27)	0 ( 0)	14 ( 23)
West Central	1 (17)	3 ( 6)	4 (57)	8 ( 13)
East Central	4 (67)	1 ( 2)	2 (29)	7 ( 11)
Southeast	0 ( 0)	4 ( 8)	1 (14)	5 ( 8)
Southwest	0 ( 0)	9 (18)	0 ( 0)	9 ( 15)
South	0 ( 0)	2 ( 4)	0 ( 0)	2 ( 3)

- **Table 274.** Identify and regularly communicate with agencies or organizations that receive possible foodborne illness complaints (e.g. agriculture agencies, facility licensing agencies, poison control centers, grocery stores) and ensure they have current contact information for your staff.

Regional Environmental Epidemiologist Region	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	1 ( 2)	60 (97)	1 ( 2)	62 (100)
Northwest	0 ( 0)	17 (28)	0 ( 0)	17 ( 27)
Northeast	0 ( 0)	14 (23)	0 ( 0)	14 ( 23)
West Central	0 ( 0)	8 (13)	0 ( 0)	8 ( 13)
East Central	0 ( 0)	6 (10)	1 (100)	7 ( 11)
Southeast	0 ( 0)	5 ( 8)	0 ( 0)	5 ( 8)
Southwest	0 ( 0)	9 (15)	0 ( 0)	9 ( 15)
South	1 (100)	1 ( 2)	0 ( 0)	2 ( 3)

- **Table 275.** Train food managers and workers about the importance of reporting unusual patterns of illness among workers or customers and food code requirements for disease reporting.

Regional Environmental Epidemiologist Region	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	10 (16)	44 (71)	8 (13)	62 (100)
Northwest	2 (20)	14 (32)	1 (13)	17 ( 27)
Northeast	3 (30)	9 (21)	2 (25)	14 ( 23)
West Central	0 ( 0)	8 (18)	0 ( 0)	8 ( 13)
East Central	1 (10)	4 ( 9)	2 (25)	7 ( 11)
Southeast	0 ( 0)	5 (11)	0 ( 0)	5 ( 8)
Southwest	2 (20)	4 ( 9)	3 (38)	9 ( 15)
South	2 (20)	0 ( 0)	0 ( 0)	2 ( 3)

**Focus Area 4: Detection of Outbreaks/Clusters**

- **Table 276.** Set up the reporting process so all reports go through one person or one person routinely reviews all reports to increase the likelihood that patterns among individual complaints will be detected.

Regional Environmental Epidemiologist Region	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	2 ( 3)	60 (97)	0 (0)	62 (100)
Northwest	0 ( 0)	17 (28)	0 (0)	17 ( 27)
Northeast	1 (50)	13 (22)	0 (0)	14 ( 23)
West Central	0 ( 0)	8 (13)	0 (0)	8 ( 13)
East Central	0 ( 0)	7 (12)	0 (0)	7 ( 11)
Southeast	0 ( 0)	5 ( 8)	0 (0)	5 ( 8)
Southwest	0 ( 0)	9 (15)	0 (0)	9 ( 15)
South	1 (50)	1 ( 2)	0 (0)	2 ( 3)

- **Table 277.** Compile interview data in a single database to facilitate examination of reports for exposure clustering trends or commonalities.

Regional Environmental Epidemiologist Region	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	12 (19)	50 (81)	0 (0)	62 (100)
Northwest	0 ( 0)	17 (34)	0 (0)	17 ( 27)
Northeast	5 (42)	9 (18)	0 (0)	14 ( 23)
West Central	2 (17)	6 (12)	0 (0)	8 ( 13)
East Central	3 (25)	4 ( 8)	0 (0)	7 ( 11)
Southeast	0 ( 0)	5 (10)	0 (0)	5 ( 8)
Southwest	1 ( 8)	8 (16)	0 (0)	9 ( 15)
South	1 ( 8)	1 ( 2)	0 (0)	2 ( 3)

- **Table 278.** Review individual complaints regularly to recognize multiple persons with a similar illness or a common exposure.

Regional Environmental Epidemiologist Region	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	7 (11)	55 (89)	0 (0)	62 (100)
Northwest	1 (14)	16 (29)	0 (0)	17 ( 27)
Northeast	3 (43)	11 (20)	0 (0)	14 ( 23)
West Central	1 (14)	7 (13)	0 (0)	8 ( 13)
East Central	1 (14)	6 (11)	0 (0)	7 ( 11)
Southeast	0 ( 0)	5 ( 9)	0 (0)	5 ( 8)
Southwest	0 ( 0)	9 (16)	0 (0)	9 ( 15)
South	1 (14)	1 ( 2)	0 (0)	2 ( 3)

- **Table 279.** Compare exposure information collected through the notification/complaint system with data from pathogen-specific surveillance to reveal potential connections between cases and increase the likelihood of detecting an outbreak.

Regional Environmental Epidemiologist Region	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	8 (13)	53 (86)	1 ( 2)	62 (100)
Northwest	0 ( 0)	16 (30)	1 (100)	17 ( 27)
Northeast	4 (50)	10 (19)	0 ( 0)	14 ( 23)
West Central	1 (13)	7 (13)	0 ( 0)	8 ( 13)
East Central	2 (25)	5 ( 9)	0 ( 0)	7 ( 11)
Southeast	0 ( 0)	5 ( 9)	0 ( 0)	5 ( 8)
Southwest	0 ( 0)	5 ( 9)	0 ( 0)	9 ( 15)
South	1 (13)	1 (2)	0 ( 0)	2 ( 3)



- **Table 280.** Check complaint information against national databases (e.g., USDA/FSIS Consumer Complaint Monitoring System) to identify cases with similar characteristics or exposures.

Regional Environmental Epidemiologist Region	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	6 (10)	28 (45)	28 (45)	62 (100)
Northwest	0 ( 0)	15 (54)	2 ( 7)	17 ( 27)
Northeast	2 (33)	8 (29)	4 (14)	14 ( 23)
West Central	0 ( 0)	1 ( 4)	7 (25)	8 ( 13)
East Central	1 (17)	0 ( 0)	6 (21)	7 ( 11)
Southeast	1 (17)	2 ( 7)	2 ( 7)	5 ( 8)
Southwest	0 ( 0)	2 ( 7)	7 (25)	9 ( 15)
South	2 (33)	0 ( 0)	0 ( 0)	2 ( 3)

**Focus Area 4: Responding to Individual Complaints**

- **Table 281.** Guide staff on responses to and communications with upset members of the public.

Regional Environmental Epidemiologist Region	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	3 ( 5)	59 (95)	0 (0)	62 (100)
Northwest	0 ( 0)	17 (29)	0 (0)	17 ( 27)
Northeast	2 (67)	12 (20)	0 (0)	14 ( 23)
West Central	0 ( 0)	8 (14)	0 (0)	8 ( 13)
East Central	0 ( 0)	7 (12)	0 (0)	7 ( 11)
Southeast	0 ( 0)	5 ( 9)	0 (0)	5 ( 8)
Southwest	0 ( 0)	9 (15)	0 (0)	9 ( 15)
South	1 (33)	1 ( 2)	0 (0)	2 ( 3)

- **Table 282.** Train staff to give appropriate instructions to persons reporting a possible foodborne illness about prevention of secondary spread and seeking health care services.

Regional Environmental Epidemiologist Region	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	4 ( 7)	58 (94)	0 (0)	62 (100)
Northwest	0 ( 0)	17 (29)	0 (0)	17 ( 27)
Northeast	2 (50)	12 (21)	0 (0)	14 ( 23)
West Central	0 ( 0)	8 (14)	0 (0)	8 ( 13)
East Central	1 (25)	6 (10)	0 (0)	7 ( 11)
Southeast	0 ( 0)	5 ( 9)	0 (0)	5 ( 8)
Southwest	0 ( 0)	9 (16)	0 (0)	9 ( 15)
South	1 (25)	1 ( 2)	0 (0)	2 ( 3)

- **Table 283.** Decide whether to routinely collect clinical specimens from independent complaints or encourage patients to seek health care.

Regional Environmental Epidemiologist Region	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	3 ( 5)	59 (95)	0 (0)	62 (100)
Northwest	0 ( 0)	17 (29)	0 (0)	17 ( 27)
Northeast	2 (67)	12 (20)	0 (0)	14 ( 23)
West Central	0 ( 0)	8 (14)	0 (0)	8 ( 13)
East Central	0 ( 0)	7 (12)	0 (0)	7 ( 11)
Southeast	0 ( 0)	5 ( 9)	0 (0)	5 ( 8)
Southwest	0 ( 0)	9 (15)	0 (0)	9 ( 15)
South	1 (33)	1 ( 2)	0 (0)	2 ( 3)

- **Table 284.** Prioritize the investigation of establishments named in individual complaints based on whether the complainant’s illness is consistent with foods eaten at the establishment, whether a food preparation or serving problem was reported, and the number of persons (with no other shared food history) implicating the establishment.

Regional Environmental Epidemiologist Region	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	3 ( 5)	59 (95)	0 (0)	62 (100)
Northwest	0 ( 0)	17 (29)	0 (0)	17 ( 27)
Northeast	2 (67)	12 (20)	0 (0)	14 ( 23)
West Central	0 ( 0)	8 (14)	0 (0)	8 ( 13)
East Central	0 ( 0)	7 (12)	0 (0)	7 ( 11)
Southeast	0 ( 0)	5 ( 9)	0 (0)	5 ( 8)
Southwest	0 ( 0)	9 (15)	0 (0)	9 ( 15)
South	1 (33)	1 ( 2)	0 (0)	2 ( 3)

**Focus Area 4: Responding to Group Complaints**

- **Table 285.** Investigate reports of illness among groups who ate together more aggressively than illness related to isolated individual complaints.

Regional Environmental Epidemiologist Region	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	0 (0)	62 (100)	0 (0)	62 (100)
Northwest	0 (0)	17 ( 27)	0 (0)	17 ( 27)
Northeast	0 (0)	14 ( 23)	0 (0)	14 ( 23)
West Central	0 (0)	8 ( 13)	0 (0)	8 ( 13)
East Central	0 (0)	7 ( 11)	0 (0)	7 ( 11)
Southeast	0 (0)	5 ( 8)	0 (0)	5 ( 8)
Southwest	0 (0)	9 ( 15)	0 (0)	9 ( 15)
South	0 (0)	2 ( 3)	0 (0)	2 ( 3)

- **Table 286.** Focus interviews associated with group complaints on the event shared by members of the group. However, be aware that a group might have more than one event in common.

Regional Environmental Epidemiologist Region	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	1 ( 2)	61 (98)	0 (0)	62 (100)
Northwest	0 ( 0)	17 (28)	0 (0)	17 ( 27)
Northeast	0 ( 0)	14 (23)	0 (0)	14 ( 23)
West Central	0 ( 0)	8 (13)	0 (0)	8 ( 13)
East Central	0 ( 0)	7 (11)	0 (0)	7 ( 11)
Southeast	0 ( 0)	5 ( 8)	0 (0)	5 ( 8)
Southwest	0 ( 0)	9 (15)	0 (0)	9 ( 15)
South	1 (100)	1 ( 2)	0 (0)	2 ( 3)

- **Table 287.** Obtain and test clinical specimens from members of the ill group. Establishing an etiology will help investigators understand the outbreak and establish links to other outbreaks or sporadic cases.

Regional Environmental Epidemiologist Region	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	3 ( 5)	59 (95)	0 (0)	62 (100)
Northwest	0 ( 0)	17 (29)	0 (0)	17 ( 27)
Northeast	1 (33)	13 (22)	0 (0)	14 ( 23)
West Central	1 (33)	7 (12)	0 (0)	8 ( 13)
East Central	0 ( 0)	7 (12)	0 (0)	7 ( 11)
Southeast	0 ( 0)	5 ( 9)	0 (0)	5 ( 8)
Southwest	0 ( 0)	9 (15)	0 (0)	9 ( 15)
South	1 (33)	1 ( 2)	0 (0)	2 ( 3)

- **Table 288.** If the presumed exposure involves food, collect and store—but do not test—food from the implicated event. Test only after epidemiologic or environmental investigations implicate the food.

Regional Environmental Epidemiologist Region	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	1 ( 2)	60 (97)	1 ( 2)	62 (100)
Northwest	0 ( 0)	17 (28)	0 ( 0)	17 ( 27)
Northeast	0 ( 0)	13 (22)	1 (100)	14 ( 23)
West Central	0 ( 0)	8 (13)	0 ( 0)	8 ( 13)
East Central	0 ( 0)	7 (12)	0 ( 0)	7 ( 11)
Southeast	0 ( 0)	5 ( 8)	0 ( 0)	5 ( 8)
Southwest	0 ( 0)	9 (15)	0 ( 0)	9 ( 15)
South	1 (100)	1 ( 2)	0 ( 0)	2 ( 3)

- **Table 289.** Test foods (rather than clinical specimens) for outbreaks thought to involve preformed toxins (e.g., enterotoxins of *Staphylococcus aureus* or *Bacillus cereus*) because detection of toxin or toxin-producing organisms in clinical specimens can be problematic.

Regional Environmental Epidemiologist Region	Not in Place N (%)	Already in Place N (%)	Not Applicable N (%)	Total N (%)
Total	4 ( 7)	57 (92)	1 ( 2)	62 (100)
Northwest	0 ( 0)	17 (30)	0 ( 0)	17 ( 27)
Northeast	1 (25)	12 (21)	1 (100)	14 ( 23)
West Central	1 (25)	7 (12)	0 ( 0)	8 ( 13)
East Central	0 ( 0)	7 (12)	0 ( 0)	7 ( 11)
Southeast	0 ( 0)	5 ( 9)	0 ( 0)	5 ( 8)
Southwest	0 ( 0)	9 (16)	0 ( 0)	9 ( 15)
South	2 (50)	0 ( 0)	0 ( 0)	2 ( 3)

**Focus Area 7: Staff Skills and Expertise**

- **Table 290.** Ensure that the epidemiologic investigator on the outbreak response team has the necessary skills to plan and conduct epidemiologic studies during an outbreak investigation (e.g. expertise in case interviews, study design, questionnaire development and data analysis).

Regional Environmental Epidemiologist Region	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	5 ( 8)	57 (92)	0 (0)	62 (100)
Northwest	2 (40)	15 (26)	0 (0)	17 ( 27)
Northeast	2 (40)	12 (21)	0 (0)	14 ( 23)
West Central	0 ( 0)	8 (14)	0 (0)	8 ( 13)
East Central	0 ( 0)	7 (12)	0 (0)	7 ( 11)
Southeast	0 ( 0)	5 ( 9)	0 (0)	5 ( 8)
Southwest	0 ( 0)	9 (16)	0 (0)	9 ( 15)
South	1 (20)	1 ( 2)	0 (0)	2 ( 3)

- **Table 291.** Provide continuing education to the epidemiologic investigator to maintain and improve skills in their specialty.

Regional Environmental Epidemiologist Region	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	30 (48)	31 (50)	1 ( 2)	62 (100)
Northwest	11 (37)	6 (19)	0 ( 0)	17 ( 27)
Northeast	12 (40)	2 ( 7)	0 ( 0)	14 ( 23)
West Central	1 ( 3)	6 (19)	1 (100)	8 ( 13)
East Central	2 ( 7)	5 (16)	0 ( 0)	7 ( 11)
Southeast	1 ( 3)	4 (13)	0 ( 0)	5 ( 8)
Southwest	1 ( 3)	8 (26)	0 ( 0)	9 ( 15)
South	2 ( 7)	0 ( 0)	0 ( 0)	2 ( 3)

- **Table 292.** Train the epidemiologic investigator in the agency's/jurisdiction's outbreak response protocols and the epidemiologic investigator's role in an investigation.

Regional Environmental Epidemiologist Region	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	21 (34)	41 (66)	0 (0)	62 (100)
Northwest	11 (52)	6 (15)	0 (0)	17 ( 27)
Northeast	6 (29)	8 (20)	0 (0)	14 ( 23)
West Central	2 (10)	6 (15)	0 (0)	8 ( 13)
East Central	1 ( 5)	6 (15)	0 (0)	7 ( 11)
Southeast	0 ( 0)	5 (12)	0 (0)	5 ( 8)
Southwest	0 ( 0)	9 (22)	0 (0)	9 ( 15)
South	1 ( 5)	1 ( 2)	0 (0)	2 ( 3)

- **Table 293.** Assemble a reference library with information about foodborne diseases, enteric illnesses and control measures. When possible, include electronic resources that can be accessed during field investigations.

Regional Environmental Epidemiologist Region	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	3 ( 5)	59 (95)	0 (0)	62 (100)
Northwest	1 (33)	16 (27)	0 (0)	17 ( 27)
Northeast	1 (33)	13 (22)	0 (0)	14 ( 23)
West Central	0 ( 0)	8 (14)	0 (0)	8 ( 13)
East Central	0 ( 0)	7 (12)	0 (0)	7 ( 11)
Southeast	0 ( 0)	5 ( 8)	0 (0)	5 ( 8)
Southwest	0 ( 0)	9 (15)	0 (0)	9 ( 15)
South	1 (33)	1 ( 2)	0 (0)	2 ( 3)

- **Table 294.** Assemble a list of resource persons who have expertise in specific disease agents and epidemiologic investigation methodologies.

Regional Environmental Epidemiologist Region	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	3 ( 5)	59 (95)	0 (0)	62 (100)
Northwest	0 ( 0)	17 (29)	0 (0)	17 ( 27)
Northeast	1 (33)	13 (22)	0 (0)	14 ( 23)
West Central	1 (33)	7 (12)	0 (0)	8 ( 13)
East Central	0 ( 0)	7 (12)	0 (0)	7 ( 11)
Southeast	0 ( 0)	5 ( 9)	0 (0)	5 ( 8)
Southwest	0 ( 0)	9 (15)	0 (0)	9 ( 15)
South	1 (33)	1 ( 2)	0 (0)	2 ( 3)



- **Table 295.** Exercise outbreak response team members together to ensure team members understand and can perform their roles and understand the roles and responsibilities of other team members.

Regional Environmental Epidemiologist Region	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	28 (45)	34 (55)	0 (0)	62 (100)
Northwest	9 (32)	8 (24)	0 (0)	17 ( 27)
Northeast	5 (18)	9 (27)	0 (0)	14 ( 23)
West Central	4 (14)	4 (12)	0 (0)	8 ( 13)
East Central	2 ( 7)	5 (15)	0 (0)	7 ( 11)
Southeast	0 ( 0)	5 (15)	0 (0)	5 ( 8)
Southwest	6 (21)	3 ( 9)	0 (0)	9 ( 15)
South	2 ( 7)	0 ( 0)	0 (0)	2 ( 3)

- **Table 296.** Ensure that all outbreak response team members regularly participate in outbreak investigation and control efforts even if it means working with another jurisdiction because the team's home jurisdiction does not have many outbreaks.

Regional Environmental Epidemiologist Region	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	22 (36)	40 (65)	0 (0)	62 (100)
Northwest	7 (32)	10 (25)	0 (0)	17 ( 27)
Northeast	4 (18)	10 (25)	0 (0)	14 ( 23)
West Central	4 (18)	4 (10)	0 (0)	8 ( 13)
East Central	1 ( 5)	6 (15)	0 (0)	7 ( 11)
Southeast	0 ( 0)	5 (13)	0 (0)	5 ( 8)
Southwest	5 (23)	4 (10)	0 (0)	9 ( 15)
South	1 ( 5)	1 ( 3)	0 (0)	2 ( 3)

- **Table 297.** If investigations are infrequent, centralize processes that require substantial experience for proficiency (e.g., case interviews, study design).

Regional Environmental Epidemiologist Region	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	7 (11)	45 (73)	10 (16)	62 (100)
Northwest	1 (14)	16 (36)	0 ( 0)	17 ( 27)
Northeast	3 (43)	10 (22)	1 (10)	14 ( 23)
West Central	1 (14)	6 (13)	1 (10)	8 ( 13)
East Central	0 ( 0)	2 ( 4)	5 (50)	7 ( 11)
Southeast	0 ( 0)	5 (11)	0 ( 0)	5 ( 8)
Southwest	0 ( 0)	6 (13)	3 (30)	9 ( 15)
South	2 (29)	0 ( 0)	0 ( 0)	2 ( 3)

**Focus Area 7: Outbreak Investigation**

- **Table 298.** Prepare a written protocol outlining the steps in the epidemiologic investigation of a foodborne disease outbreak.

Regional Environmental Epidemiologist Region	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	11 (18)	51 (82)	0 (0)	62 (100)
Northwest	4 (36)	13 (26)	0 (0)	17 ( 27)
Northeast	2 (18)	12 (24)	0 (0)	14 ( 23)
West Central	0 ( 0)	8 (16)	0 (0)	8 ( 13)
East Central	1 ( 9)	6 (12)	0 (0)	7 ( 11)
Southeast	1 ( 9)	4 ( 8)	0 (0)	5 ( 8)
Southwest	2 (18)	7 (14)	0 (0)	9 ( 15)
South	1 ( 9)	1 ( 2)	0 (0)	2 ( 3)

- **Table 299.** Have appropriate equipment and supplies ready for use by the epidemiologic investigator when needed.

Regional Environmental Epidemiologist Region	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	5 ( 8)	57 (92)	0 (0)	62 (100)
Northwest	0 ( 0)	17 (30)	0 (0)	17 ( 27)
Northeast	2 (40)	12 (21)	0 (0)	14 ( 23)
West Central	0 ( 0)	8 (14)	0 (0)	8 ( 13)
East Central	0 ( 0)	7 (12)	0 (0)	7 ( 11)
Southeast	1 (20)	4 ( 7)	0 (0)	5 ( 8)
Southwest	1 (20)	8 (14)	0 (0)	9 ( 15)
South	1 (20)	1 ( 2)	0 (0)	2 ( 3)

- **Table 300.** Use standardized forms for collecting exposure information to ensure that pertinent information is collected from all cases.

Regional Environmental Epidemiologist Region	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	1 ( 2)	61 (98)	0 (0)	62 (100)
Northwest	0 ( 0)	17 (28)	0 (0)	17 ( 27)
Northeast	0 ( 0)	14 (23)	0 (0)	14 ( 23)
West Central	0 ( 0)	8 (13)	0 (0)	8 ( 13)
East Central	0 ( 0)	7 (11)	0 (0)	7 ( 11)
Southeast	0 ( 0)	5 ( 8)	0 (0)	5 ( 8)
Southwest	0 ( 0)	9 (15)	0 (0)	9 ( 15)
South	1 (100)	1 ( 2)	0 (0)	2 ( 3)

- **Table 301.** Use standardized “core” questions and data elements on data collection forms to enhance data sharing and comparisons across jurisdictions.

Regional Environmental Epidemiologist Region	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	1 ( 2)	61 (98)	0 (0)	62 (100)
Northwest	0 ( 0)	17 (28)	0 (0)	17 ( 27)
Northeast	0 ( 0)	14 (23)	0 (0)	14 ( 23)
West Central	0 ( 0)	8 (13)	0 (0)	8 ( 13)
East Central	0 ( 0)	7 (11)	0 (0)	7 ( 11)
Southeast	0 ( 0)	5 ( 8)	0 (0)	5 ( 8)
Southwest	0 ( 0)	9 (15)	0 (0)	9 ( 15)
South	1 (100)	1 ( 2)	0 (0)	2 ( 3)

- **Table 302.** Develop templates for data collection forms before an outbreak occurs.

Regional Environmental Epidemiologist Region	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	3 ( 5)	56 (90)	3 ( 5)	62 (100)
Northwest	1 (33)	13 (23)	3 (100)	17 ( 27)
Northeast	2 (67)	12 (21)	0 ( 0)	14 ( 23)
West Central	0 ( 0)	8 (14)	0 ( 0)	8 ( 13)
East Central	0 ( 0)	7 (13)	0 ( 0)	7 ( 11)
Southeast	0 ( 0)	5 ( 9)	0 ( 0)	5 ( 8)
Southwest	0 ( 0)	9 (16)	0 ( 0)	9 ( 15)
South	0 ( 0)	2 ( 4)	0 ( 0)	2 ( 3)

- **Table 303.** Obtain tools to analyze outbreak data (e.g. Epi Info™, SAS®) before an outbreak occurs.

Regional Environmental Epidemiologist Region	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	13 (21)	39 (63)	10 (16)	62 (100)
Northwest	2 (15)	6 (15)	9 (90)	17 ( 27)
Northeast	7 (54)	7 (18)	0 ( 0)	14 ( 23)
West Central	0 ( 0)	8 (21)	0 ( 0)	8 ( 13)
East Central	1 ( 8)	6 (15)	0 ( 0)	7 ( 11)
Southeast	0 ( 0)	5 (13)	0 ( 0)	5 ( 8)
Southwest	2 (15)	6 (15)	1 (10)	9 ( 15)
South	1 ( 8)	1 ( 3)	0 ( 0)	2 ( 3)

- **Table 304.** Ensure that staff are trained to use these tools.

**Note: Evaluation scoring was omitted during electronic CIFOR document creation. As a result, the majority of counties did not fill out this question.**

Regional Environmental Epidemiologist Region	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	1 (25)	3 (75)	0 (0)	4 (100)
Northwest	0 (0)	0 ( 0)	0 (0)	0 ( 0)
Northeast	1 (100)	1 (33)	0 (0)	2 ( 50)
West Central	0 (0)	1 (33)	0 (0)	1 ( 25)
East Central	0 (0)	0 ( 0)	0 (0)	0 ( 0)
Southeast	0 (0)	0 ( 0)	0 (0)	0 ( 0)
Southwest	0 (0)	0 ( 0)	0 (0)	0 ( 0)
South	0 (0)	1 (33)	0 (0)	1 ( 25)

\*Missing 58 responses

- **Table 305.** Ensure that appropriate electronic record management procedures are in place during an outbreak investigation including routine data backups, off-site redundant storage, and disaster recovery procedures.

Regional Environmental Epidemiologist Region	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	7 (11)	55 (89)	0 (0)	62 (100)
Northwest	0 ( 0)	17 (31)	0 (0)	17 ( 27)
Northeast	4 (57)	10 (18)	0 (0)	14 ( 23)
West Central	1 (14)	7 (13)	0 (0)	8 ( 13)
East Central	1 (14)	6 (11)	0 (0)	7 ( 11)
Southeast	0 ( 0)	5 ( 9)	0 (0)	5 ( 8)
Southwest	1 (14)	8 (15)	0 (0)	9 ( 15)
South	0 ( 0)	2 ( 4)	0 (0)	2 ( 3)

- **Table 306.** Determine how confidential information will be stored and whether and how it can be shared with others in the outbreak response team.

Regional Environmental Epidemiologist Region	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	1 ( 2)	61 (98)	0 (0)	62 (100)
Northwest	1 (100)	16 (26)	0 (0)	17 ( 27)
Northeast	0 ( 0)	14 (23)	0 (0)	14 ( 23)
West Central	0 ( 0)	8 (13)	0 (0)	8 ( 13)
East Central	0 ( 0)	7 (12)	0 (0)	7 ( 11)
Southeast	0 ( 0)	5 ( 8)	0 (0)	5 ( 8)
Southwest	0 ( 0)	9 (15)	0 (0)	9 ( 15)
South	0 ( 0)	2 ( 3)	0 (0)	2 ( 3)

- **Table 307.** Be familiar with and follow state and federal laws and practices that protect confidential information from disclosure.

Regional Environmental Epidemiologist Region	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	1 ( 2)	61 (98)	0 (0)	62 (100)
Northwest	1 (100)	16 (26)	0 (0)	17 ( 27)
Northeast	0 ( 0)	14 (23)	0 (0)	14 ( 23)
West Central	0 ( 0)	8 (13)	0 (0)	8 ( 13)
East Central	0 ( 0)	7 (12)	0 (0)	7 ( 11)
Southeast	0 ( 0)	5 ( 8)	0 (0)	5 ( 8)
Southwest	0 ( 0)	9 (15)	0 (0)	9 ( 15)
South	0 ( 0)	2 ( 3)	0 (0)	2 ( 3)

**Focus Area 7: Identify Etiologic Agent (if unknown)**

- **Table 308.** Contact health care providers of cases who have sought medical attention to determine if a diagnosis has been confirmed.

Regional Environmental Epidemiologist Region	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	0 (0)	62 (100)	0 (0)	62 (100)
Northwest	0 (0)	17 ( 27)	0 (0)	17 ( 27)
Northeast	0 (0)	14 ( 23)	0 (0)	14 ( 23)
West Central	0 (0)	8 ( 13)	0 (0)	8 ( 13)
East Central	0 (0)	7 ( 11)	0 (0)	7 ( 11)
Southeast	0 (0)	5 ( 8)	0 (0)	5 ( 8)
Southwest	0 (0)	9 ( 15)	0 (0)	9 ( 15)
South	0 (0)	2 ( 3)	0 (0)	2 ( 3)

- **Table 309.** Interview cases to characterize symptoms, incubation period, and duration of illness to provide clues to a possible etiology.

Regional Environmental Epidemiologist Region	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	0 (0)	62 (100)	0 (0)	62 (100)
Northwest	0 (0)	17 ( 27)	0 (0)	17 ( 27)
Northeast	0 (0)	14 ( 23)	0 (0)	14 ( 23)
West Central	0 (0)	8 ( 13)	0 (0)	8 ( 13)
East Central	0 (0)	7 ( 11)	0 (0)	7 ( 11)
Southeast	0 (0)	5 ( 8)	0 (0)	5 ( 8)
Southwest	0 (0)	9 ( 15)	0 (0)	9 ( 15)
South	0 (0)	2 ( 3)	0 (0)	2 ( 3)



- **Table 310.** Obtain stool samples from cases and establish an etiology through laboratory testing.

Regional Environmental Epidemiologist Region	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	1 ( 2)	61 (98)	0 (0)	62 (100)
Northwest	0 ( 0)	17 (28)	0 (0)	17 ( 27)
Northeast	0 ( 0)	14 (23)	0 (0)	14 ( 23)
West Central	0 ( 0)	8 (13)	0 (0)	8 ( 13)
East Central	0 ( 0)	7 (11)	0 (0)	7 ( 11)
Southeast	0 ( 0)	5 ( 8)	0 (0)	5 ( 8)
Southwest	0 ( 0)	9 (15)	0 (0)	9 ( 15)
South	1 (100)	1 ( 2)	0 (0)	2 ( 3)

**Focus Area 7: Identify Persons At Risk**

- **Table 311.** Identify additional cases by alerting health care providers, reviewing laboratory reports and medical charts, asking cases if they know of others who are ill, reviewing employee or school absences, reviewing death certificates, surveying the affected population, or asking the public to contact the health department if they have the illness under investigation.

Regional Environmental Epidemiologist Region	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	2 ( 3)	60 (98)	0 (0)	62 (100)
Northwest	0 ( 0)	17 (28)	0 (0)	17 ( 27)
Northeast	2 (100)	12 (20)	0 (0)	14 ( 23)
West Central	0 ( 0)	8 (13)	0 (0)	8 ( 13)
East Central	0 ( 0)	7 (12)	0 (0)	7 ( 11)
Southeast	0 ( 0)	5 ( 8)	0 (0)	5 ( 8)
Southwest	0 ( 0)	9 (15)	0 (0)	9 ( 15)
South	0 ( 0)	2 ( 3)	0 (0)	2 ( 3)

- **Table 312.** If an outbreak is related to an event or establishment, obtain a list of persons attending the event or a list of persons patronizing the establishment during the outbreak period.

Regional Environmental Epidemiologist Region	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	0 (0)	62 (100)	0 (0)	62 (100)
Northwest	0 (0)	17 ( 27)	0 (0)	17 ( 27)
Northeast	0 (0)	14 ( 23)	0 (0)	14 ( 23)
West Central	0 (0)	8 ( 13)	0 (0)	8 ( 13)
East Central	0 (0)	7 ( 11)	0 (0)	7 ( 11)
Southeast	0 (0)	5 ( 8)	0 (0)	5 ( 8)
Southwest	0 (0)	9 ( 15)	0 (0)	9 ( 15)
South	0 (0)	2 ( 3)	0 (0)	2 ( 3)

- **Table 313.** If an outbreak is related to an event or establishment, interview persons who attended the event or patronized the establishment to identify cases and determine attack rates by time.

Regional Environmental Epidemiologist Region	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	0 (0)	62 (100)	0 (0)	62 (100)
Northwest	0 (0)	17 ( 27)	0 (0)	17 ( 27)
Northeast	0 (0)	14 ( 23)	0 (0)	14 ( 23)
West Central	0 (0)	8 ( 13)	0 (0)	8 ( 13)
East Central	0 (0)	7 ( 11)	0 (0)	7 ( 11)
Southeast	0 (0)	5 ( 8)	0 (0)	5 ( 8)
Southwest	0 (0)	9 ( 15)	0 (0)	9 ( 15)
South	0 (0)	2 ( 3)	0 (0)	2 ( 3)

**Focus Area 7: Identify Mode of Transmission And Vehicle**

- **Table 314.** Establish a case definition based on the etiologic agent and/or clinical characteristics of the illness associated with the outbreak with restrictions by time, place and person.

Regional Environmental Epidemiologist Region	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	0 (0)	62 (100)	0 (0)	62 (100)
Northwest	0 (0)	17 ( 27)	0 (0)	17 ( 27)
Northeast	0 (0)	14 ( 23)	0 (0)	14 ( 23)
West Central	0 (0)	8 ( 13)	0 (0)	8 ( 13)
East Central	0 (0)	7 ( 11)	0 (0)	7 ( 11)
Southeast	0 (0)	5 ( 8)	0 (0)	5 ( 8)
Southwest	0 (0)	9 ( 15)	0 (0)	9 ( 15)
South	0 (0)	2 ( 3)	0 (0)	2 ( 3)

- **Table 315.** Characterize cases by person, place, and time and evaluate this descriptive epidemiology to identify patterns suggestive of particular food items or diets.

Regional Environmental Epidemiologist Region	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	0 (0)	62 (100)	0 (0)	62 (100)
Northwest	0 (0)	17 ( 27)	0 (0)	17 ( 27)
Northeast	0 (0)	14 ( 23)	0 (0)	14 ( 23)
West Central	0 (0)	8 ( 13)	0 (0)	8 ( 13)
East Central	0 (0)	7 ( 11)	0 (0)	7 ( 11)
Southeast	0 (0)	5 ( 8)	0 (0)	5 ( 8)
Southwest	0 (0)	9 ( 15)	0 (0)	9 ( 15)
South	0 (0)	2 ( 3)	0 (0)	2 ( 3)

- **Table 316.** Collect exposure histories from patients as soon as possible after they are reported by using techniques to improve food history recall.

Regional Environmental Epidemiologist Region	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	0 (0)	62 (100)	0 (0)	62 (100)
Northwest	0 (0)	17 ( 27)	0 (0)	17 ( 27)
Northeast	0 (0)	14 ( 23)	0 (0)	14 ( 23)
West Central	0 (0)	8 ( 13)	0 (0)	8 ( 13)
East Central	0 (0)	7 ( 11)	0 (0)	7 ( 11)
Southeast	0 (0)	5 ( 8)	0 (0)	5 ( 8)
Southwest	0 (0)	9 ( 15)	0 (0)	9 ( 15)
South	0 (0)	2 ( 3)	0 (0)	2 ( 3)

- **Table 317.** To improve food history recall, encourage cases to remember what they ate by looking at a calendar for the appropriate period and elaborating on where they ate, with whom, and events associated with the meal.

Regional Environmental Epidemiologist Region	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	2 ( 3)	60 (97)	0 (0)	62 (100)
Northwest	0 ( 0)	17 (28)	0 (0)	17 ( 27)
Northeast	1 (50)	13 (22)	0 (0)	14 ( 23)
West Central	1 (50)	7 (12)	0 (0)	8 ( 13)
East Central	0 ( 0)	7 (12)	0 (0)	7 ( 11)
Southeast	0 ( 0)	5 ( 8)	0 (0)	5 ( 8)
Southwest	0 ( 0)	9 (15)	0 (0)	9 ( 15)
South	0 ( 0)	2 ( 3)	0 (0)	2 ( 3)

- **Table 318.** To improve food history recall, enlist the help of those preparing meals for case(s) during the period of interest.

Regional Environmental Epidemiologist Region	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	1 ( 2)	61 (98)	0 (0)	62 (100)
Northwest	0 ( 0)	17 (28)	0 (0)	17 ( 27)
Northeast	1 (100)	14 (23)	0 (0)	14 ( 23)
West Central	0 ( 0)	8 (13)	0 (0)	8 ( 13)
East Central	0 ( 0)	7 (11)	0 (0)	7 ( 11)
Southeast	0 ( 0)	5 ( 8)	0 (0)	5 ( 8)
Southwest	0 ( 0)	9 (15)	0 (0)	9 ( 15)
South	0 ( 0)	1 ( 2)	0 (0)	2 ( 3)

- **Table 319.** To improve food history recall, obtain cash register or credit card receipts from cases to identify/verify food purchases and places where food was consumed.

Regional Environmental Epidemiologist Region	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	3 ( 5)	53 (86)	6 (10)	62 (100)
Northwest	0 ( 0)	17 (32)	0 ( 0)	17 ( 27)
Northeast	0 ( 0)	13 (25)	1 (17)	14 ( 23)
West Central	2 (67)	3 ( 6)	3 (50)	8 ( 13)
East Central	0 ( 0)	7 (13)	0 ( 0)	7 ( 11)
Southeast	0 ( 0)	4 ( 8)	1 (17)	5 ( 8)
Southwest	0 ( 0)	8 (15)	1 (17)	9 ( 15)
South	1 (33)	1 ( 2)	0 ( 0)	2 ( 3)

- **Table 320.** To help cases think about all exposures, provide a structured list of places where cases might get food including food pantries, farmers' markets, conference meetings and caterers.

Regional Environmental Epidemiologist Region	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	3 ( 5)	56 (90)	3 ( 5)	62 (100)
Northwest	0 ( 0)	17 (30)	0 ( 0)	17 ( 27)
Northeast	0 ( 0)	13 (23)	1 (33)	14 ( 23)
West Central	2 (67)	5 ( 9)	1 (33)	8 ( 13)
East Central	0 ( 0)	7 (13)	0 ( 0)	7 ( 11)
Southeast	0 ( 0)	5 ( 9)	0 ( 0)	5 ( 8)
Southwest	0 ( 0)	8 (14)	1 (33)	9 ( 15)
South	1 (33)	1 ( 2)	0 ( 0)	2 ( 3)

- **Table 321.** Work with grocery stores where cases purchased food to obtain shopper card purchase records to identify/verify food purchases.

Regional Environmental Epidemiologist Region	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	3 ( 5)	41 (66)	18 (29)	62 (100)
Northwest	0 ( 0)	17 (42)	0 ( 0)	17 ( 27)
Northeast	0 ( 0)	9 (22)	5 (28)	14 ( 23)
West Central	2 (67)	3 ( 7)	3 (17)	8 ( 13)
East Central	0 ( 0)	6 (15)	1 ( 6)	7 ( 11)
Southeast	0 ( 0)	5 (12)	0 ( 0)	5 ( 8)
Southwest	0 ( 0)	0 ( 0)	9 (50)	9 ( 15)
South	1 (33)	1 ( 2)	0 ( 0)	2 ( 3)

- **Table 322.** Document brand names and product code information for prepackaged food items consumed by cases.

Regional Environmental Epidemiologist Region	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	2 ( 3)	60 (97)	0 (0)	62 (100)
Northwest	0 ( 0)	17 (28)	0 (0)	17 ( 27)
Northeast	0 ( 0)	14 (23)	0 (0)	14 ( 23)
West Central	0 ( 0)	8 (13)	0 (0)	8 ( 13)
East Central	0 ( 0)	7 (12)	0 (0)	7 ( 11)
Southeast	0 ( 0)	5 ( 8)	0 (0)	5 ( 8)
Southwest	1 (50)	8 (13)	0 (0)	9 ( 15)
South	1 (50)	1 ( 2)	0 (0)	2 ( 3)

- **Table 323.** Explore other sources of information (in addition to interview information from cases) such as product distribution data.

Regional Environmental Epidemiologist Region	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	2 ( 3)	57 (92)	3 ( 5)	62 (100)
Northwest	0 ( 0)	17 (30)	0 ( 0)	17 ( 27)
Northeast	0 ( 0)	14 (25)	0 ( 0)	14 ( 23)
West Central	1 (50)	7 (12)	0 ( 0)	8 ( 13)
East Central	0 ( 0)	7 (12)	0 ( 0)	7 ( 11)
Southeast	0 ( 0)	5 ( 9)	0 ( 0)	5 ( 8)
Southwest	0 ( 0)	6 (11)	3 (100)	9 ( 15)
South	1 (50)	1 ( 2)	0 ( 0)	2 ( 3)

- **Table 324.** If resources are sufficient, interview cases with a detailed exposure history questionnaire as they are reported (i.e. before an outbreak has been recognized).

Regional Environmental Epidemiologist Region	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	1 ( 2)	56 (90)	5 ( 8)	62 (100)
Northwest	0 ( 0)	17 (30)	0 ( 0)	17 ( 27)
Northeast	0 ( 0)	13 (23)	1 (20)	14 ( 23)
West Central	1 (100)	5 ( 9)	2 (40)	8 ( 13)
East Central	0 ( 0)	6 (11)	1 (20)	7 ( 11)
Southeast	0 ( 0)	5 ( 9)	0 ( 0)	5 ( 8)
Southwest	0 ( 0)	8 (14)	1 (20)	9 ( 15)
South	0 ( 0)	2 ( 4)	0 ( 0)	2 ( 3)

- **Table 325.** When resources are insufficient to conduct detailed exposure history interviews at the initial report, collect information about limited high-risk exposures associated with the pathogen when the case is reported followed by a more detailed interview if a cluster is recognized.

Regional Environmental Epidemiologist Region	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	0 (0)	57 (92)	5 ( 8)	62 (100)
Northwest	0 (0)	17 (30)	0 ( 0)	17 ( 27)
Northeast	0 (0)	14 (25)	0 ( 0)	14 ( 23)
West Central	0 (0)	7 (12)	1 (20)	8 ( 13)
East Central	0 (0)	5 ( 9)	2 (40)	7 ( 11)
Southeast	0 (0)	4 ( 7)	1 (20)	5 ( 8)
Southwest	0 (0)	8 (14)	1 (20)	9 ( 15)
South	0 (0)	2 ( 4)	0 ( 0)	2 ( 3)



- **Table 326.** If conducting detailed exposure history interviews with cases only after a cluster is identified, either use the results for hypothesis generation with subsequent testing of those hypotheses in a controlled study or use the detailed exposure history questionnaire on an appropriate set of controls at the same time, thereby combining hypothesis generation and testing.

Regional Environmental Epidemiologist Region	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	1 ( 2)	57 (92)	4 ( 7)	62 (100)
Northwest	0 ( 0)	17 (30)	0 ( 0)	17 ( 27)
Northeast	0 ( 0)	14 (25)	0 ( 0)	14 ( 23)
West Central	0 ( 0)	8 (14)	0 ( 0)	8 ( 13)
East Central	0 ( 0)	6 (11)	1 (25)	7 ( 11)
Southeast	0 ( 0)	5 ( 9)	0 ( 0)	5 ( 8)
Southwest	0 ( 0)	6 (11)	3 (75)	9 ( 15)
South	1 (100)	1 ( 2)	0 ( 0)	2 ( 3)

- **Table 327.** Use a dynamic cluster investigation process to generate hypotheses about an outbreak. Interview initial cases within a cluster using a detailed exposure history questionnaire and systematically re-interview those same cases as new exposures are identified.

Regional Environmental Epidemiologist Region	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	2 ( 3)	59 (95)	1 ( 2)	62 (100)
Northwest	0 ( 0)	17 (29)	0 ( 0)	17 ( 27)
Northeast	0 ( 0)	14 (24)	0 ( 0)	14 ( 23)
West Central	1 (50)	7 (12)	0 ( 0)	8 ( 13)
East Central	0 ( 0)	7 (12)	0 ( 0)	7 ( 11)
Southeast	0 ( 0)	5 ( 9)	0 ( 0)	5 ( 8)
Southwest	0 ( 0)	8 (14)	1 (100)	9 ( 15)
South	1 (50)	1 ( 2)	0 ( 0)	2 ( 3)

- **Table 328.** Interview appropriate non-ill persons to obtain exposure information for comparisons in case-control or cohort studies.

Regional Environmental Epidemiologist Region	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	1 ( 2)	61 (98)	0 (0)	62 (100)
Northwest	0 ( 0)	17 (28)	0 (0)	17 ( 27)
Northeast	0 ( 0)	14 (23)	0 (0)	14 ( 23)
West Central	0 ( 0)	8 (13)	0 (0)	8 ( 13)
East Central	0 ( 0)	7 (11)	0 (0)	7 ( 11)
Southeast	0 ( 0)	5 ( 8)	0 (0)	5 ( 8)
Southwest	0 ( 0)	9 (15)	0 (0)	9 ( 15)
South	1 (100)	1 ( 2)	0 (0)	2 ( 3)

- **Table 329.** Interview non-outbreak-associated ill persons (i.e. cases with microbial agents other than the agent under investigation from the same time) to obtain exposure information for controls for case-case analytic studies.

Regional Environmental Epidemiologist Region	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	2 ( 3)	51 (82)	9 (15)	62 (100)
Northwest	0 ( 0)	17 (33)	0 ( 0)	17 ( 27)
Northeast	0 ( 0)	14 (28)	0 ( 0)	14 ( 23)
West Central	1 (50)	5 (10)	2 (22)	8 ( 13)
East Central	0 ( 0)	7 (14)	0 ( 0)	7 ( 11)
Southeast	0 ( 0)	5 (10)	0 ( 0)	5 ( 8)
Southwest	0 ( 0)	2 ( 4)	7 (78)	9 ( 15)
South	1 (50)	1 ( 2)	0 ( 0)	2 ( 3)

- **Table 330.** Compare exposure frequencies among cases against known or estimated background exposure rates such as those found in the “*FoodNet Population Survey Atlas of Exposures, 2006-2009*”.

Regional Environmental Epidemiologist Region	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	4 ( 7)	31 (45)	27 (44)	62 (100)
Northwest	0 ( 0)	14 (45)	3 (11)	17 ( 27)
Northeast	2 (50)	8 (26)	4 (15)	14 ( 23)
West Central	1 (25)	0 ( 0)	7 (26)	8 ( 13)
East Central	0 ( 0)	5 (16)	2 ( 7)	7 ( 11)
Southeast	1 (25)	2 ( 7)	2 ( 7)	5 ( 8)
Southwest	0 ( 0)	0 ( 0)	9 (33)	9 ( 15)
South	0 ( 0)	2 ( 7)	0 ( 0)	2 ( 3)

- **Table 331.** In the absence of survey data or data from a control group, use common sense estimates of the prevalence of a given exposure to identify exposures of interest among cases.

Regional Environmental Epidemiologist Region	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	1 ( 2)	48 (77)	13 (21)	62 (100)
Northwest	0 ( 0)	17 (35)	0 ( 0)	17 ( 27)
Northeast	0 ( 0)	14 (29)	0 ( 0)	14 ( 23)
West Central	1 (100)	3 ( 6)	4 (31)	8 ( 13)
East Central	0 ( 0)	7 (15)	0 ( 0)	7 ( 11)
Southeast	0 ( 0)	4 ( 8)	1 ( 8)	5 ( 8)
Southwest	0 ( 0)	1 ( 2)	8 ( 6)	9 ( 15)
South	0 ( 0)	2 ( 4)	0 ( 0)	2 ( 3)

**Focus Area 7: Determine Potential For Ongoing Transmission**

- **Table 332.** On the basis of the agent, incubation period, and likelihood of secondary spread, create an epidemic curve and evaluate the course of the epidemic to determine whether cases might still be occurring.

Regional Environmental Epidemiologist Region	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	0 (0)	61 (98)	1 ( 2)	62 (100)
Northwest	0 (0)	17 (28)	0 ( 0)	17 ( 27)
Northeast	0 (0)	13 (21)	1 (100)	14 ( 23)
West Central	0 (0)	8 (13)	0 ( 0)	8 ( 13)
East Central	0 (0)	7 (12)	0 ( 0)	7 ( 11)
Southeast	0 (0)	5 ( 8)	0 ( 0)	5 ( 8)
Southwest	0 (0)	9 (15)	0 ( 0)	9 ( 15)
South	0 (0)	2 ( 3)	0 ( 0)	2 ( 3)

- **Table 333.** If the outbreak appears to be ongoing, continue surveillance and review potential abatement procedures.

Regional Environmental Epidemiologist Region	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	0 (0)	62 (100)	0 (0)	62 (100)
Northwest	0 (0)	17 ( 27)	0 (0)	17 ( 27)
Northeast	0 (0)	14 ( 23)	0 (0)	14 ( 23)
West Central	0 (0)	8 ( 13)	0 (0)	8 ( 13)
East Central	0 (0)	7 ( 11)	0 (0)	7 ( 11)
Southeast	0 (0)	5 ( 8)	0 (0)	5 ( 8)
Southwest	0 (0)	9 ( 15)	0 (0)	9 ( 15)
South	0 (0)	2 ( 3)	0 (0)	2 ( 3)

**Focus Area 7: Communication**

- **Table 334.** Ensure that outbreak response team members know each other before an outbreak occurs.

Regional Environmental Epidemiologist Region	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	1 ( 2)	61 (98)	0 (0)	62 (100)
Northwest	0 ( 0)	17 (28)	0 (0)	17 ( 27)
Northeast	0 ( 0)	14 (23)	0 (0)	14 ( 23)
West Central	0 ( 0)	8 (13)	0 (0)	8 ( 13)
East Central	0 ( 0)	7 (11)	0 (0)	7 ( 11)
Southeast	0 ( 0)	5 ( 8)	0 (0)	5 ( 8)
Southwest	0 ( 0)	9 (15)	0 (0)	9 ( 15)
South	1 (100)	1 ( 2)	0 (0)	2 ( 3)

- **Table 335.** Establish and use routine procedures for communicating among outbreak response team members and their organizational units before an outbreak occurs.

Regional Environmental Epidemiologist Region	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	2 ( 3)	60 (97)	0 (0)	62 (100)
Northwest	0 ( 0)	17 (28)	0 (0)	17 ( 27)
Northeast	0 ( 0)	14 (23)	0 (0)	14 ( 23)
West Central	0 ( 0)	8 (13)	0 (0)	8 ( 13)
East Central	0 ( 0)	7 (12)	0 (0)	7 ( 11)
Southeast	0 ( 0)	5 ( 8)	0 (0)	5 ( 8)
Southwest	0 ( 0)	9 (15)	0 (0)	9 ( 15)
South	2 (100)	0 ( 0)	0 (0)	2 ( 3)

- **Table 336.** Maintain close communication and coordination among members of the outbreak response team during an investigation.

Regional Environmental Epidemiologist Region	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	1 ( 2)	61 (98)	0 (0)	62 (100)
Northwest	0 ( 0)	17 (28)	0 (0)	17 ( 27)
Northeast	0 ( 0)	14 (23)	0 (0)	14 ( 23)
West Central	0 ( 0)	8 (13)	0 (0)	8 ( 13)
East Central	0 ( 0)	7 (11)	0 (0)	7 ( 11)
Southeast	0 ( 0)	5 ( 8)	0 (0)	5 ( 8)
Southwest	0 ( 0)	9 (15)	0 (0)	9 ( 15)
South	1 (100)	1 ( 2)	0 (0)	2 ( 3)

- **Table 337.** Communicate actions taken and new outbreak information to all members of the outbreak response team in a timely manner.

Regional Environmental Epidemiologist Region	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	2 ( 3)	60 (97)	0 (0)	62 (100)
Northwest	0 ( 0)	17 (28)	0 (0)	17 ( 27)
Northeast	0 ( 0)	14 (23)	0 (0)	14 ( 23)
West Central	0 ( 0)	8 (13)	0 (0)	8 ( 13)
East Central	1 (50)	6 (10)	0 (0)	7 ( 11)
Southeast	0 ( 0)	5 ( 8)	0 (0)	5 ( 8)
Southwest	0 ( 0)	9 (15)	0 (0)	9 ( 15)
South	1 (50)	1 ( 2)	0 (0)	2 ( 3)

- **Table 338.** Participate in daily meetings with the outbreak response team to update the entire team. Make sure suspicious new exposures are adequately considered by all team members.

Regional Environmental Epidemiologist Region	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	4 ( 7)	57 (92)	1 ( 2)	62 (100)
Northwest	0 ( 0)	17 (30)	0 ( 0)	17 ( 27)
Northeast	0 ( 0)	14 (25)	0 ( 0)	14 ( 23)
West Central	3 (75)	5 ( 9)	0 ( 0)	8 ( 13)
East Central	0 ( 0)	7 (12)	0 ( 0)	7 ( 11)
Southeast	0 ( 0)	5 ( 9)	0 ( 0)	5 ( 8)
Southwest	0 ( 0)	9 (16)	0 ( 0)	9 ( 15)
South	1 (25)	0 ( 0)	1 (100)	2 ( 3)

- **Table 339.** Submit preliminary reports of outbreaks to CDC's National Outbreak Reporting System while the investigation is ongoing to identify potentially related outbreaks occurring in multiple places and facilitate further investigation of the outbreaks.

Regional Environmental Epidemiologist Region	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	1 ( 2)	28 (45)	33 (53)	62 (100)
Northwest	0 ( 0)	4 (14)	13 (39)	17 ( 27)
Northeast	0 ( 0)	11 (39)	3 ( 9)	14 ( 23)
West Central	0 ( 0)	3 (11)	5 (15)	8 ( 13)
East Central	0 ( 0)	4 (14)	3 ( 9)	7 ( 11)
Southeast	0 ( 0)	5 (18)	0 ( 0)	5 ( 8)
Southwest	0 ( 0)	0 ( 0)	9 (27)	9 ( 15)
South	1 (100)	1 ( 4)	0 ( 0)	2 ( 3)

**Focus Area 7: Making Changes**

- **Table 340.** Participate in a debriefing following each outbreak investigation with all members of the outbreak response team to identify lessons learned and compare notes on ultimate findings. Identify factors that compromised the investigation and clarify changes to procedures, resources, training, and agency structure to optimize future investigations.

Regional Environmental Epidemiologist Region	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	32 (52)	30 (48)	0 (0)	62 (100)
Northwest	7 (22)	10 (33)	0 (0)	17 ( 27)
Northeast	5 (16)	9 (30)	0 (0)	14 ( 23)
West Central	5 (16)	3 (10)	0 (0)	8 ( 13)
East Central	5 (16)	2 ( 7)	0 (0)	7 ( 11)
Southeast	1 ( 3)	4 (13)	0 (0)	5 ( 8)
Southwest	7 (22)	2 ( 7)	0 (0)	9 ( 15)
South	2 ( 6)	0 ( 0)	0 (0)	2 ( 3)

- **Table 341.** Summarize investigation findings, conclusions, and recommendations in a written report consistent with the size and complexity of the investigation including lessons learned and action items for follow-up and quality improvement.

Regional Environmental Epidemiologist Region	Not in Place	Already in Place	Not Applicable	Total
	N (%)	N (%)	N (%)	N (%)
Total	4 ( 7)	52 (84)	6 ( 10)	62 (100)
Northwest	1 (25)	10 (19)	6 (100)	17 ( 27)
Northeast	2 (50)	12 (23)	0 ( 0)	14 ( 23)
West Central	0 ( 0)	8 (15)	0 ( 0)	8 ( 13)
East Central	0 ( 0)	7 (14)	0 ( 0)	7 ( 11)
Southeast	0 ( 0)	5 (10)	0 ( 0)	5 ( 8)
Southwest	0 ( 0)	9 (17)	0 ( 0)	9 ( 15)
South	1 (25)	1 ( 2)	0 ( 0)	2 ( 3)



## Appendix D: Participant Evaluation Comments

Additional Comments from Participant Evaluations (these comments are sic erat scriptum):

- A comment section after each discussion point would have made the process easier, instead of going through all the points and needing to refer back later while writing out the comments.
- Could focus more on developing / strengthening surveillance system currently in place.
- Encourage an in-depth review of current SOPs and provide insight on areas for improvements.
- Good opportunity to get EPI and EH together and work on communication.
- Great, no changes.
- It was organized and the process went smoothly.
- It would have been good to have a section definition for some terms and the cross walk.
- Lengthy.
- Need Legionellosis investigation for single cases (training).
- Perhaps need follow-up meetings for review. Overall, this was a good focus meeting to see where we are at.
- Put recommendations for improvement underneath each item. Remove repeat items.
- Some of the language / verbage was a little confusing & lengthy.
- Some of the questions had to be discussed in order to understand the intent of the question.
- Thank you for your insight/professional knowledge about foodborne outbreaks & investigations.
- The toolkit highlighted / identified some aspects of reporting we need to improve on (i.e., recording brand names during interviews). Overall, it was a good review of our program & where we stand.
- The toolkit was very helpful. We would like the opportunity to receive additional training from time to time as our county has little opportunity to work with food/waterborne complaints/outbreaks.

- The worksheets were a nice 'conversation opener' and served as a catalyst for good discussion. The resulting face to face discussion with the REE was the most valuable part of the evaluation process.
- Training Public Health staff is very important.
- Use the information gathered relevant to additional training to develop table top (real life senario) mock investigations to have necessary skill set.
- Very informative in assessing strengths and weaknesses, both locally and regionally.
- We enjoyed having the [Regional Environmental Epidemiologist] and the support they have given us. Thank you!
- Well presented.
- Would be helpful to know how the CIFOR will use this data as it will apply to the local CHD.
- Would like periodic training to review procedures. Thanks.



