Wyoming

Training Needs Assessment

Colorado Integrated Food
Safety Center of Excellence

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1 Introduction

The Colorado Integrated Food Safety Center of Excellence (CoE) is a collaboration between the Colorado Department of Public Health and Environment (CDPHE) and the Colorado School of Public Health (CSPH) which aims to provide technical assistance and training on epidemiological, laboratory, and environmental investigations of foodborne illness outbreaks and associated analyses. The Colorado CoE also intends to identify and implement best practices in foodborne diseases surveillance and serve as a resource for public health professionals at state, local, and regional levels. These activities are directed by the Centers for Disease Control and Prevention (CDC) as part of the 2012 Food Safety Modernization Act.

To identify training needed in foodborne illness surveillance and outbreak response in the Rocky Mountain Region, the Colorado CoE undertook a training needs assessment in Wyoming in 2014. This needs assessment will inform the development of future training in the Rocky Mountain region.

2 Methodology

Key informant interviews were used to assess the training needs of public health personnel in Wyoming in the area of foodborne illness surveillance and outbreak response.

2.1 Interview guide

Key informant interviews were conducted with the aid of an interview guide (Appendix A). The interview guide included questions about the informant's position and experience, including the number of foodborne and enteric disease outbreaks investigated in recent years by the informant and by their team and the informant's role in outbreak investigations. The guide ascertained what if any training in outbreak investigation is provided at the informant's agency or institution and whether the informant participated in these trainings.

Informants were presented a number of potential training topics and asked to rank these potential trainings on a scale of 1-5 based on how useful the training would be to them or their organization (with 1 being the most useful, 5 being the least useful). Informants were queried about preferred training delivery methods. Informants were asked about potential challenges and barriers to training. The interview guide was piloted prior to initiating interviews with actual informants.

2.2 Key informant recruitment and interviews

Our goal was to interview key informants from local and state public health agencies in Wyoming who also represented different levels of experience. Key informants were selected by personnel at the Wyoming Department of Health (WDH), and included epidemiologists, environmental health specialists, and public health nurses. An introductory email was sent to informants by our contact at the WDH explaining the purpose of the training needs assessment and informing them that a team member would contact them to schedule an interview. Interviews were conducted by telephone by a team member at the Colorado School of Public Health.

2.3 Data analysis

Interviews were transcribed by hand and summarized in an Excel spreadsheet. Potential trainings, ranked on a scaled of 1-5, were weighted and summed to give an overall score (i.e., 1 being the most useful was given a weight of 5; 5 being the least useful was given a weight of 1). Qualitative data were analyzed using a basic qualitative inductive approach (reading, coding displaying, reducing, and interpreting). After these steps were taken, common and emergent themes were inferred from the data.

3 Results

3.1 Key informant characteristics

Fourteen key informant interviews were completed during January and February 2014. All interviews were conducted by telephone.

Key informants held various positions within their institution, ranging from entry level to senior managerial, and included 10 environmental health specialists, 2 epidemiologists, and 2 public health nurses (Table 1).

Informants represented both state and local public health agencies. State agencies included the WDH and the Wyoming Department of Agriculture. Local agencies included the City of Laramie, the Cheyenne-Laramie County Health Department, the Casper-Natrona County Health Department, the Sweetwater County Health Department, and Teton County Public Health.

Table 1: Key informant characteristics

Characteristic	N=14
Occupation	
Epidemiologist	2
Environmental health specialist	10
Public health nurse	2
Size of Health Department	
State	8
Local	6
Name of Agency	
Wyoming Department of Health	4
Wyoming Department of Agriculture	4
Cheyenne-Laramie County Health Department	1
Casper-Natrona County Health Department	1
Sweetwater County Health Department	2
Teton County Public Health	1
City of Laramie	1

Most key informants (9; 64%) did not investigate any outbreaks in 2013; of these, 6 reported that no-one of their team was involved in an outbreak investigation during that time period. Of the remaining key informants, 2 (14%) investigated one outbreak, and 3 (21%) investigated 5 or more outbreaks. The two epidemiologists both reported investigating 10 or more outbreaks. The majority (10; 71%) of informants had worked 10 years or more in a position where they were tasked with responding to outbreaks; 5 (36%) had worked 20 years or more in such a position.

All informants reported receiving some form of training in foodborne disease surveillance and outbreak response. The most frequently mentioned formal trainings were those organized by the Wyoming Department of Health and the U.S. Food and Drug Administration. Most reported doing introductory trainings on steps in an outbreak investigation. However, only 3 key informants said they had received training in the past year; many said it had been a number of years since their last training.

Quotes from informants about existing training opportunities

"*I do know of external trainings offered through the state health department. They are mostly short courses on calling your contact points at the state health department so they will come help you."* – Environmental Health Specialist

"We are mostly expected to seek out trainings on our own." – Epidemiologist

"Courses should be tailored to include continuing education credits that are needed for a lot of professional standards that environmental health specialists are required to have for their position. Employers are more willing to send employees to a training if they get some sort of benefit." – Environmental Health Specialist

"It's always good to have training just as a refresher for people who don't deal with outbreaks on a regular basis." – Environmental Health Specialist

"We arrange for presenters to come to us usually once a year. Training is part of new staff orientation." – Public Health Nurse

3.2 Ranking of training needs

Training on 'Interviewing skills' received the highest overall score followed by training in 'Foodborne disease surveillance'. 'Interviewing skills' was ranked as 1 or 2 by all of the 14 informants when asked how useful the trainings would be to them or their organization. 'Foodborne disease surveillance' was ranked as a 1 or 2 by 12 of the 14 informants (Table 2).

Table 2: Importance of training needs as ranked by informants

Training	Overall score	Number of informants ranking training as 1 or 2*
Interviewing skills	65	14
Foodborne disease surveillance	60	12
Overview of outbreak investigation	60	11
Communicating with the media and the public	57	11
Control of secondary spread	57	11
Environmental assessments	56	11
Legal issues in surveillance and outbreak investigations	56	11
Environmental sampling	56	10
Questionnaire design	51	10
Laboratory testing 101	52	9
Conducting trace-back investigations	56	8
Descriptive epidemiological methods	47	7
Writing after action reports	49	6
Analytical epidemiological methods	45	6
**How useful do you think these trainings would be to you and your organization (where 1 is the most useful)?*		

Rankings were very similar by occupation (Table 3). All occupations gave their highest rankings to training on 'Interviewing skills'. Training on 'Foodborne disease surveillance' and 'Overview of outbreak investigations' were ranked highly by environmental health specialists and public health nurses. Epidemiologists ranked 'Communicating with the media and public' and 'Conducting trace-back investigations' highly.

Table 3: Importance of training needs as ranked by informants, by occupation

Training (overall score; number of informants ranking training as 1 [most useful] or 2)		
Environmental health specialist (n=10)	**Epidemiologist (n=2)**	**Public health nurse (n=2)**
Interviewing skills (score=47; n=10)	Interviewing skills (score=8; n=2)	Interviewing skills (score=10; n=2)
Foodborne disease surveillance (score=44; n=9)	Communicating with the media/ public (score=8; n=2)	Foodborne disease surveillance (score=10; n=2)
Overview of outbreak investigations (score=43; n=8)	Conducting trace-back investigations (score=8; n=1)	Overview of outbreak investigations (score=10; n=2)
Environmental sampling (score=43; n=8)	Control of secondary spread (score=7; n=1)	Control of secondary spread (score=9 n=2)
Legal issues in surveillance/outbreaks (score=42; n=9)	Laboratory testing 101 (score=7; n=1)	Communicating with the media/public (score=8; n=2)
Environmental assessments (score=42; n=8)	Descriptive epidemiological methods (score=7; n=1)	Environmental assessments (score=8; n=2)
Control of secondary spread (score=41; n=8)	Overview of outbreak investigations (score=7; n=1)	Legal issues in surveillance/ outbreaks (score=8; n=2)
Communicating with the media/public (score=41; n=7)	Questionnaire design (score=7; n=1)	Laboratory testing 101 (score=8; n=2)
Conducting trace-back investigations (score=40; n=6)	Foodborne disease surveillance (score=6; n=1)	Conducting trace-back investigations (score=8; n=1)
Questionnaire design (score=39; n=8)	Analytical epidemiological methods (score=6; n=1)	Environmental sampling (score=7; n=1)
Laboratory testing 101 (score=37; n=6)	Environmental assessments (score=6; n=1)	Descriptive epidemiological methods (score=7; n=1)
Writing after action reports (score=36; n=5)	Environmental sampling (score=6; n=1)	Writing after action reports (score=7; n=1)
Descriptive epidemiological methods (score=33; n=5)	Legal issues in surveillance/ outbreaks (score=6; n=0)	Analytical epidemiological methods (score=7; n=1)
Analytical epidemiological methods (score=32; n=4)	Writing after action reports (score=6; n=0)	Questionnaire design (score=5; n=1)

3.3 Training delivery methods

The majority of informants said they would prefer in-person trainings for trainings on 'Interviewing skills', 'Environmental sampling', 'Overview of outbreak investigations', and 'Communicating with the media and the public' (Table 4). A reason given was the opportunity for asking questions that in-person trainings provide. Both online and in-person were considered options for trainings on 'Environmental assessments', 'Control of secondary spread', and 'Questionnaire design'. Interviewees considered these topics appropriate for an online format, and it was admitted that an online format would allow more flexibility. One other idea mentioned that the best format would really be a combination of online training (as an overview) and in-person training (for more depth).

Table 4: Preference for in-person versus online training for ranked trainings (among informants ranking training as 1 [most useful] or 2)

Training (number of informants ranking training as 1 [most useful] or 2)	In-person N (%)	Online N (%)
Interviewing skills (n=14)	14 (100)	0 (0)
Environmental sampling (n=10)	8 (80)	2 (20)
Overview of outbreak investigations (n=11)	7 (64)	4 (36)
Communicating with the media and the public (n=11)	7 (64)	4 (36)
Environmental assessments (n=11)	6 (55)	5 (45)
Control of secondary spread (n=11)	6 (55)	5 (45)
Questionnaire design (n=10)	6 (60)	4 (40)
Laboratory Testing 101 (n=9)	6 (67)	3 (33)
Conducting trace-back investigations (n=8)	5 (63)	3 (38)
Foodborne disease surveillance (n=12)	5 (42)	7 (58)
Descriptive epidemiological methods (n=7)	3 (43)	4 (57)
Writing after action reports (n=6)	3 (50)	3 (50)
Analytical epidemiological methods (n=6)	2 (33)	4 (67)

Most informants also had a preference for team training as opposed to individual learning. Informants stated that it was important for everyone to learn the material due to the teamwork approach used during outbreak investigations and more importantly, that it allowed for more consistent training. When the entire team was unable to attend a training together, a common practice reported was to have one person attend the training and then in turn train the rest of the team. This practice was utilized when only a couple of staff members could leave the office at the same time due to a small staff and the need for coverage in the office.

3.4 Training to address challenges during outbreak investigations

Challenges faced during outbreak investigations included a reluctance of cases and controls to be interviewed, issues with specimen collection and testing, cases being hard to reach, and a lack of timeliness by people involved in the outbreak investigation and response (Table 5).

Table 5. Challenges experienced during outbreak investigations

Challenge	N
Reluctance of cases/ controls to be interviewed	6
Issues with specimen collection and testing	4
Cases are hard to reach	4
Lack of timeliness by people involved in the investigation	3
Lack of staff	2
Lack of case reporting	2
Lack of experience	2
Outbreak leaked to media	1
Lack of training	1
Lack of understanding of roles and responsibilities	1

All informants cited the great communication between the county health departments and the WDH as a primary reason for outbreak investigations being successful. Many informants mentioned how helpful the state epidemiologists have always been and that they seem to have the knowledge to complete the task quickly and accurately. Other informants highlighted the constant communication and coordination between the locals, the Department of Agriculture, and other stakeholders as another reason outbreak investigations are successful.

Further reasons cited for the success of outbreak investigations included the help of the public health nurses who work at the WDH and being able to call on them for help when county health departments were overwhelmed. One informant mentioned Wyoming being so small enabled quick dissemination of information locally.

Table 6. Trainings key informants said would help address challenges experienced during outbreak investigations, by occupation*

Environmental Health Specialists	Epidemiologists	Public Health Nurses
Short courses on handling different types of outbreaks	Interviewing skills	Surveillance training
Interviewing skills	Questionnaire and survey design	Steps in an outbreak investigations
Lab sampling skills	Case studies on the steps in an outbreak investigation	
On-site assessments		
How to handle social media		
Refresher courses		
Case studies on the steps in an outbreak investigation		
**Ranked in order of most frequently mentioned*		

Quotes from informants about specific challenges when doing outbreak investigation work

"We don't investigate outbreaks very often, so we don't have a lot of experience coordinating investigations." – Environmental Health Specialist

"Cases are not always truthful when you interview them. They may be trying to protect someone." – Environmental Health Specialist

"There's no consistency in how outbreaks are coordinated with the state, and there's a sense that the investigation belongs to the state and not the local jurisdiction." – Public Health Nurse

"Cooperation from establishment managers or owners. Employers have made it difficult for employees to come to interviews." – Environmental Health Specialist

"Trying to collect samples from people is challenging because people don't want to submit a sample." – Epidemiologist

3.5 Barriers to participating in trainings

Funding was cited as the main barrier to participating in trainings. Only three of the 14 key informants interviewed said that funding for training was not an issue at their health department. This was another reason cited for sending only one person to receive training who would in turn train the rest of the outbreak team.

The second most important barrier was time. Several informants, particularly those in smaller health departments, mentioned that being part of a small staff often limited them in how far they could travel for trainings. If they were away from the office, necessary tasks would not be accomplished.

Travel was also mentioned as a barrier, particularly by informants located in rural areas. Most trainings are offered in Cheyenne, which may require several hours of driving each way to attend trainings. Some informants mentioned traveling instead to Denver or Salt Lake City, because those cities were actually closer to them than Cheyenne and the WDH. A lesser mentioned barrier was a lack of awareness of trainings being offered.

3.6 Useful resources

Resources mentioned by informants that would be helpful during outbreak investigations included questionnaires, fact sheets for families and clients, and checklists for specific pathogens or different outbreak settings. Also mentioned was software pertaining to outbreak response and contact sheets of key personnel at the WDH and other county health departments.

4 Conclusions

This assessment highlighted the need for more training opportunities for public health personnel in Wyoming in foodborne disease surveillance and outbreak response. Interest was expressed for a number of trainings including trainings on 'Interviewing skills', 'Environmental sampling', 'Overview of outbreak investigations', 'Communicating with the media and public', 'Environmental assessments', 'Control of secondary spread', and 'Questionnaire design'.

Training needs differed slightly by occupation. All occupations gave their highest ranking to trainings on 'Interviewing skills'. Also, environmental health specialists and public health nurses were interested in other basic trainings such as 'Foodborne disease surveillance' and 'Overview of outbreak investigations'. Epidemiologists found 'Communicating with the media and public' and 'Conducting trace-back investigations' to be topics they most needed training in.

Barriers to participating in trainings included funding, time, and travel. Therefore, while many informants said they preferred in-person trainings, online trainings may be a more feasible option due to the limited resources and time available.

This information will be used by the Colorado CoE to recommend future planning and training development in the state of Wyoming and regionally.