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RESEARCH REPORT

Evaluation of the Council to Improve Foodborne Outbreak Response (CIFOR) Guidelines for Foodborne Disease Outbreak Response and Associated Toolkit

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Sponsored by the Council of State and Territorial Epidemiologists

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Summary

Introduction

Foodborne disease is a significant public health problem. Estimates from the U.S. Centers for Disease Control and Prevention (CDC) indicate that, in 2011, approximately one in six individuals in the United States was affected by a foodborne disease, resulting in 127,839 hospitalizations and roughly 3,000 deaths (Centers for Disease Control and Prevention, 2011; Scallan et al., 2011).

With reducing the burden of foodborne disease among its primary goals, CIFOR developed the *Guidelines for Foodborne Outbreak Response* (2009) and a companion Toolkit (2011) to facilitate improvements in foodborne disease outbreak detection and response at the state and local levels.

The objective of this study is to assess the distribution and use of the CIFOR *Guidelines* and Toolkit to determine whether and to what extent they are reaching their intended users and achieving their intended goals. Findings from this evaluation provide important information about how the dissemination, content, and structure of the *Guidelines* and Toolkit can be changed to facilitate their use and further improve foodborne outbreak response.

Methods

The RAND team used a mixed-method approach to evaluate the distribution and use of the CIFOR *Guidelines* and Toolkit. Data were collected through a survey of intended users from public health, environmental health, food regulatory agencies, and public health laboratories to quantify the reach and use of the CIFOR *Guidelines* and Toolkit. The survey was conducted among a convenience sample and thus may not be representative of the full population of intended users of the CIFOR resources. However, no list of intended users exists, and the CIFOR member organizations made every effort to distribute the survey link to their membership. The resulting survey sample included respondents from across key job functions and different levels of government.

Additional information was collected through in-depth interviews with staff from local jurisdictions and state agencies who were familiar with the CIFOR *Guidelines* and Toolkit. The sample of key informants for the interviews was developed purposively and again may not be representative of all users of the CIFOR resources. However, the interview sample was selected to represent diverse job functions, geographies, and governance structures, as well as various levels of government, making it possible to further explore differences in the training and utilization of these resources.

The study's qualitative approach focuses on harnessing the knowledge of stakeholders to gain more in-depth information, including examples of how the *Guidelines* and Toolkit have been used, what facilitates (or hinders) their use, and what improvements might be made.

Results

The results from our survey of intended users of the CIFOR resources and our interviews with key informants from state agencies and local jurisdictions that have experience using CIFOR resources provides important information about the awareness and use of these resources. The survey respondents were distributed across a range of jurisdictional levels and primary job functions (e.g., epidemiologists, laboratorians, regulators) and thus provided varied perspectives from the intended users of the *Guidelines* and Toolkit. Our interviewees were distributed across a range of geographic locations and types of governance and thus provided a more detailed perspective from a sample of actual users of the *Guidelines* and Toolkit.

On the whole, there is strong awareness of the CIFOR resources among intended users. Among our survey respondents, 80 percent reported being familiar with the *Guidelines* and 65 percent with the Toolkit. While high across all job functions, there is still some variation in awareness, suggesting that the methods of dissemination may have been more effective for some job functions than others. Our survey results also show that intended users at the city level are disproportionately unaware of the CIFOR resources, suggesting that it may be beneficial to target future dissemination efforts toward city-level jurisdictions. Approximately 18 percent of intended users were aware of the *Guidelines* but not the Toolkit. While this disconnect may be explained partly by the fact that the *Guidelines* have been available longer, it may also suggest that the methods used to disseminate the *Guidelines* were more effective than those for the Toolkit. Given the Toolkit's importance, as reported by the interviewees, for identifying areas for improvement and making changes, additional dissemination methods for the Toolkit may be an area to explore.

Both survey respondents and interviewees who had used the *Guidelines* and Toolkit found the resources very helpful. They reported that the documents are well organized and easy to navigate, and that they also find the content to be very useful. The interviewees reported that the *Guidelines* are a valuable reference but that the amount of information included can be

overwhelming. Additionally, training on the CIFOR Toolkit was reported as facilitating its use to identify areas for improvement and implement recommendations.

Survey respondents found the Toolkit Focus Areas and the *Guidelines* chapters to be highly relevant to their work. Many of the respondents reported that they have either implemented or are planning to implement recommendations from the CIFOR resources. Among survey respondents who reported using the Toolkit, the highest rates of planned or actual implementation were for Relationships (Focus Area 1), at 59 percent, and Communications (Focus Area 3), at 58 percent. Among the guidelines, the highest rates were seen for Planning and Preparation (Chapter 3), at 46 percent, and Investigation (Chapter 5), at 41 percent. In addition, approximately one-quarter to one-third of respondents reported that at least some of the recommendations across the Focus Areas and chapters were already in place. The lowest rates of planned or actual implementation were seen for Food Recall (Focus Area 11), at 22 percent, and Legal Considerations (Chapter 9), at 21 percent.

The ease of implementation is one factor that may affect choices about which recommendations to focus on. The survey results indicate that, overall, users of the CIFOR resources found the recommendations easy to implement. The notable exceptions include the set of recommendations related to performance indicators in the *Guidelines*, which 33 percent reported were difficult to implement, and recommendations related to food recall in the Toolkit, which 37 percent reported were difficult to implement. These results suggest that it may be useful to review the content of the Performance Indicators chapter and the Food Recall Focus Area and consider developing tools or resources that could facilitate implementation in these areas.

While all of the sites represented by our interviewees have used the CIFOR resources, there is substantial variation in their approaches and the extent of their use. In some sites, very little has been done (e.g., held a meeting to discuss the resources), while in others the *Guidelines* and Toolkit are used on an ongoing basis (e.g., in quarterly meetings) to improve different areas of response. Our survey and interview results identify several facilitators and barriers that help explain the overall levels of use and some of the variation between jurisdictions. Not surprisingly, given the economic situation of state and local governments, the biggest barrier reported by survey and interview respondents is not having adequate resources (e.g., time, money, and personnel) to carry out the recommended activities. Consequently, many of the recommendations identified by the interviewees were intended to address the resource problem, at least to some extent. For example, many respondents were interested in having greater access to templates and forms that could be adapted to their jurisdiction. They also wanted to see examples of how other jurisdictions had used the resources and implemented the recommendations. The underlying motivation for these suggestions was to make it easier to implement recommendations and save time and effort by not having to "reinvent the wheel."

Another important factor influencing the implementation of recommendations is the level of interest in foodborne disease outbreak response within an agency. Minimal interest can be a

significant barrier to implementation. This suggests that it may be useful to think about ways to communicate the importance of foodborne disease outbreak response more effectively and to develop tools or resources for staff to generate interest in jurisdictions where interest is low.

Once over the hurdle of implementation, many survey respondents reported noticeable improvements in their jurisdiction's foodborne disease outbreak response. Improvement in the timeliness of the response is the most commonly reported change by survey respondents (26 percent of respondents that implemented at least one recommendation reported an improvement in timeliness). Most interviewees reported that at least some changes have been made as a result of using the resources. Even in places that reported little use beyond an initial in-person training, improvements were reported in communication and in overall understanding of the foodborne disease outbreak response (e.g., roles and responsibilities of all parties). In places where the resources have been used to a greater extent, the most commonly reported changes included improvements in protocols, communication (e.g., the development of contact lists), after action reporting, and performance indicators. While there is a general sense that foodborne disease outbreak response has improved in a variety of ways as a result of the changes made, very few interviewees could point to measured improvements in performance indicators. Most of the jurisdictions and agencies are still in the process of identifying and implementing appropriate performance indicators for monitoring these changes.

Interview respondents offered a number of recommendations for facilitating the use of the CIFOR resources. In addition to the desire for additional tools and resources to assist with implementation, the recommendations addressed the content and organization of the resources, as well as their alignment with other key documents. While most interviewees felt the documents were comprehensive and had few suggestions for significant changes, three additional topics for inclusion came up in several interviews: (1) working with industry, (2) data systems and informatics, and (3) more detail on laboratory functions. Interviewees frequently noted the lengthiness of both the *Guidelines* and the Toolkit and asked for condensed summary materials. The most common suggestion for improving the *Guidelines* was to create a smaller version (e.g., pocket guide, checklist) of the document. Finally, many jurisdictions and agencies noted challenges in conforming to numerous standards and requirements and recommended that the *Guidelines* help users navigate the landscape. In particular, interviewees indicated the importance of common performance indicators across different grant programs, or a comparison for when indicators do not overlap.

Conclusions

Together, the results from the survey and the interviews suggest that the goals of the CIFOR *Guidelines* and Toolkit are being met. Respondents reported that the resources and the corresponding trainings helped them to

- **better understand current foodborne disease outbreak response activities in their agency/jurisdiction:** In particular, interview respondents noted that working through the Toolkit Focus Areas with all of their partners (i.e., environmental health, epidemiology, laboratory) helped them to understand the foodborne disease outbreak response system as a whole, as well as how their specific activities fit in.
- **become more familiar with recommended practices:** Many interview respondents noted that the *Guidelines*, in particular, was a key resource for them. They use it as a reference manual for themselves and a training document for new staff.
- **identify specific CIFOR recommendations and activities that will improve the performance of their agency/jurisdiction during future foodborne disease outbreak responses and make plans to implement those activities:** Through the use of the Toolkit, both survey and interview respondents reported identifying and implementing a set of recommended changes (e.g., improved protocols, updated contact lists).

Moreover, the results provide an early indication that the CIFOR resources are achieving the goal of improving foodborne disease outbreak response. There is a general sense among those that have used the resources that the resulting changes have improved foodborne disease outbreak response. Very few, however, were able to document changes with performance indicators. Fortunately, many state and local agencies report that they are in the process of developing and tracking such indicators. As more state and local jurisdictions collect and track this information, the strength of the evidence base supporting foodborne disease outbreak response can only improve and it will be possible to identify those recommendations and specific activities that generate the biggest improvements in foodborne disease outbreak response.

Finally, the results provide important information to CIFOR about how the resources could be revised and/or expanded to further increase their utility. The resources are viewed as comprehensive, and very few people identified additional topics that should be covered. Many respondents noted, however, that additional tools and resources to support their use of the *Guidelines* and Toolkit would be extremely helpful. If additional resources were available to facilitate implementation, the impact of the CIFOR resources on foodborne disease outbreak response could be even greater.