FOCUS AREA 5 WORKSHEET: Pathogen-Specific Surveillance

CIFOR Council to Improve Foodborne Outbreak Response

Detect • Investigate • Control • Prevent

Complete this worksheet if "pathogen-specific surveillance" is a high-priority Focus Area for efforts to improve foodborne disease outbreak-related activities in your agency or jurisdiction. (NOTE: The term "agency/jurisdiction" refers to the entity for which your workgroup is making decisions. See your completed "Preliminaries" worksheet for a definition.)

List the individuals participating in the discussion of this Focus Area (and their affiliations).

To help you understand what is included in this Focus Area, review the following goals and keys to success.

GOALS FOR PATHOGEN-SPECIFIC SURVEILLANCE:

The agency/jurisdiction receives reports from health care providers and laboratories on all cases of disease for which certain foodborne pathogens are identified and obtains case information in a timely manner so as to allow quick detection and investigation of possible outbreaks.

1. PRIORITIZE THE KEYS TO SUCCESS FOR PATHOGEN-SPECIFIC SURVEILLANCE

"Keys to success" are activities, relationships, and resources that are critical to achieving success in a Focus Area. Determining whether an agency/jurisdiction has a particular key to success in place is somewhat subjective. Metrics, such as measures of time (e.g., rapidly, timely, or quickly), have not been defined. Your workgroup should provide its own definitions for these terms, as is appropriate for your agency/jurisdiction, and use its best judgment in deciding whether a particular key to success is fully or partially in place. Rate the priority for implementing each key to success based on its likely impact on foodborne outbreak response at your agency/jurisdiction and available resources. Use a scale of 1 to 5 to rate each key to success (1=low priority for implementation, and 5=high priority for implementation). If a key to success is already in place in your agency/jurisdiction, check the appropriate box. If a key to success is not relevant to your agency/jurisdiction, select N/A.

	Already in Place	Priority for Implementation or Improvement in Your Agency/Jurisdiction LOW - - - - - - - - HIGH
Reporting/submission of isolates		
• State has mandatory reporting of diseases that are likely to have been foodborne, as well as mandatory submission of pathogen isolates or clinical specimens associated with these disease cases. *Notes (activities, procedures, or comments):*	☐	1 2 3 4 5 N/A

	Already in Place	Priority for Implementation or Improvement in Your Agency/Jurisdiction LOW - - - - - - - - HIGH
• Staff actively solicit case reports and submission of specimens or isolates to improve completeness of reporting. *Notes (activities, procedures, or comments):*	☐	1 2 3 4 5 N/A
• Agency/jurisdiction has a system to rapidly transport specimens or isolates from clinical laboratories to the public health laboratory. *Notes (activities, procedures, or comments):*	☐	1 2 3 4 5 N/A

Testing of specimens

• Public health laboratory has the capacity to quickly process and test specimens/isolates submitted by clinical laboratories, including pathogen confirmation and subtyping. *Notes (activities, procedures, or comments):*	☐	1 2 3 4 5 N/A

Collection of exposure information

• Staff collect sufficient demographic and exposure information from patients to recognize possible patterns and associations between cases in a timely fashion. *Notes (activities, procedures, or comments):*	☐	1 2 3 4 5 N/A

Detection of clusters/outbreaks

• Staff analyze case information (e.g., demographics, exposure information, subtyping results) to rapidly identify possible clusters or outbreaks. *Notes (activities, procedures, or comments):*	☐	1 2 3 4 5 N/A

	Already in Place	Priority for Implementation or Improvement in Your Agency/Jurisdiction LOW - - - - - - - - HIGH

Communication

- Public health laboratory shares test results with epidemiology staff in a timely fashion.

Notes (activities, procedures, or comments):

☐ | 1 2 3 4 5 N/A

- Public health laboratory reports test results to national databases in a timely fashion.

Notes (activities, procedures, or comments):

☐ | 1 2 3 4 5 N/A

Making changes

- Agency/jurisdiction involves investigation and response team members in a debriefing or after-action review following outbreak responses to improve future investigation practices and to prevent future outbreaks based on lessons learned.

Notes (activities, procedures, or comments):

☐ | 1 2 3 4 5 N/A

- Agency/jurisdiction has performance indicators related to pathogen-specific surveillance, routinely evaluates its performance in this Focus Area, and tracks progress as part of continuous process improvement.

Notes (activities, procedures, or comments):

☐ | 1 2 3 4 5 N/A

2. PRIORITIZE CIFOR *GUIDELINES* RECOMMENDATIONS TO ADDRESS NEEDED IMPROVEMENTS

Having identified activities and procedures in need of improvement, review the CIFOR Guidelines recommendations related to this Focus Area (listed below). Rate the priority for implementing each recommendation based on its likely impact on foodborne outbreak response at your agency/jurisdiction and available resources. Use a scale of 1 to 5 to rate each recommendation (1=low priority for implementation, and 5=high priority for implementation). If a recommendation is already in place in your agency/jurisdiction, check the appropriate box. If a recommendation is not relevant to your agency/jurisdiction, select N/A. ***Refer to the blue underlined section number following each recommendation to view the recommendation as it appears in the CIFOR Guidelines.***

	Already in Place	Priority for Implementation or Improvement in Your Agency/Jurisdiction LOW - - - - - - - - HIGH
Reporting/submission of isolates		
• Due to culture-independent diagnostics, amend reporting rules to include patient specimens (not just isolates) among the required clinical materials that must be submitted to the public health laboratory. (Table 2.1)	☐	1 2 3 4 5 N/A
• Encourage health care providers to test patient specimens as part of the routine diagnostic process for possible foodborne diseases. (Table 3.4)	☐	1 2 3 4 5 N/A
• Increase reporting of cases and submission of clinical materials by health care providers and clinical laboratories through regulatory action. (Table 2.1)	☐	1 2 3 4 5 N/A
• Increase reporting of cases and submission of clinical materials by health care providers and clinical laboratories through education and regular feedback to reporters. (2.2.3)	☐	1 2 3 4 5 N/A
• Reconcile case reports submitted to the epidemiology unit and laboratory samples submitted to the public health laboratory to identify unreported cases. (4.1.3) (4.1.5)	☐	1 2 3 4 5 N/A
Additional ideas:		
Testing of specimens		
• Confer with the public health laboratory to determine subtyping methods available for the pathogen under study. (4.1.4)	☐	1 2 3 4 5 N/A
• Streamline the process from submission of specimens to testing by the public health laboratory to decrease the time between onset of illness in the patient and confirmation of the case as part of an outbreak. (4.1.7)	☐	1 2 3 4 5 N/A
• Conduct subtyping as the specimens are submitted. Do not wait for a specific number of specimens to accumulate before testing. (4.1.4) (4.1.7)	☐	1 2 3 4 5 N/A

	Already in Place	Priority for Implementation or Improvement in Your Agency/Jurisdiction LOW - - - - - - - - HIGH
• Perform tests such as whole genome sequencing (WGS) and serotyping concurrently. (4.1.4)	☐	1 2 3 4 5 N/A

Additional ideas:

Collection of exposure information

• More aggressively investigate cases of serious diseases or diseases that are likely to result in a public health intervention (e.g., *E. coli* O157:H7 infection) than other diseases. (4.1.5) (4.1.6)	☐	1 2 3 4 5 N/A
• Interview patients as soon as possible after cases are reported or isolates are received, when patient recall and motivation to cooperate with investigators is the greatest. (Table 5.1) (5.3.3)	☐	1 2 3 4 5 N/A
• Plot cases on an epidemic curve to track illnesses over time. (5.2.4)	☐	1 2 3 4 5 N/A
• Obtain an exposure history from the patient consistent with the incubation period of the pathogen. (Table 5.1) (5.3.3) (4.1.5)	☐	1 2 3 4 5 N/A
• Collect a detailed exposure history at the time of initial report. (4.1.5) (5.1.6)	☐	1 2 3 4 5 N/A
• Where insufficient resources exist to collect detailed exposure histories at the time of the initial report, use a two-step interview process: (1) interview all cases about a limited number of high-risk exposures specific to the pathogen when reported, and (2) if circumstances indicate that the case is part of a cluster, re-interview the case using a detailed exposure history questionnaire. (4.1.5)	☐	1 2 3 4 5 N/A

• In collecting a detailed exposure history, use a mix of question types including:
  • Closed-ended questions about exposures previously linked to outbreaks or that could plausibly be associated with the pathogen
  • Broad, open-ended questions to capture exposures that might not have been considered
  • Questions that elicit more specific information, such as brand and place of purchase, about high-frequency exposures (5.3.2)
	☐	1 2 3 4 5 N/A

• In collecting an exposure history, routinely ask patients about group exposures, such as banquets and other events. (5.3.3)	☐	1 2 3 4 5 N/A
• In collecting an exposure history, collect information about recent travel. (5.3.3)	☐	1 2 3 4 5 N/A

Additional ideas:

	Already in Place	Priority for Implementation or Improvement in Your Agency/Jurisdiction LOW - - - - - - - - HIGH
Collection of exposure information		
• Use standard forms that include standard "core" questions and data elements to enhance data sharing and comparisons across jurisdictions. (7.4.3)	☐	1 2 3 4 5 N/A
• Train staff in the use of standard forms for proper completion. (3.4.3) (3.2.2)	☐	1 2 3 4 5 N/A
• If investigations are infrequent, centralize the interview process to use more experienced interviewers. (4.2.2)	☐	1 2 3 4 5 N/A
• Create data systems to easily enter, tabulate, and analyze exposure information so that clusters (based on a common exposure) can be more easily recognized. (4.1.6) (4.2.2)	☐	1 2 3 4 5 N/A
• Determine how confidential information will be stored and whether and how it can be shared. (2.3) (3.5)	☐	1 2 3 4 5 N/A
• Be familiar with and follow state and federal laws and practices that protect confidential information from disclosure. (2.3)	☐	1 2 3 4 5 N/A
Additional ideas:		
Detection of clusters/outbreaks		
• Use daily, automated laboratory reporting and analysis systems to compare the frequency of disease agents to historical frequencies and national trends. (4.1.6)	☐	1 2 3 4 5 N/A
• To identify clusters, compare disease agent frequencies at multiple levels of specificity (e.g., subtype, more stringent subtype) and in subgroups of population (defined by selected characteristics). (4.1.6)	☐	1 2 3 4 5 N/A

• Assess and triage clusters on factors such as:
  ◦ The novelty of a subtype pattern
  ◦ Increased occurrence of relatively common subtypes based on historical frequencies or national trends
  ◦ Geographic or temporal clustering
  ◦ Unexpected demographic distribution of cases (4.1.6)
	☐	1 2 3 4 5 N/A

• Obtain tools to analyze surveillance data (e.g., Epi Info, SAS). (3.2.1)	☐	1 2 3 4 5 N/A
• Ensure that staff are trained to use these tools. (3.2.2)	☐	1 2 3 4 5 N/A
• Compare exposure information obtained through pathogen-specific surveillance with data obtained through local complaint systems to increase the likelihood of detecting outbreaks. (4.2.3) (5.3.1)	☐	1 2 3 4 5 N/A
Additional ideas:		

	Already in Place	Priority for Implementation or Improvement in Your Agency/Jurisdiction LOW - - - - - - - - HIGH
Communication		
• Identify individuals with clinical training to communicate with patients and describe actions patients should take to protect their and their family's health. Provide these individuals with training in communication for high-stress situations. (3.5.2)	☐	1 2 3 4 5 N/A
• Establish and use routine procedures for communicating among epidemiology, laboratory, and environmental health units within an agency and between local and state agencies. (6.0.2)	☐	1 2 3 4 5 N/A
• Immediately report clusters of cases identified by the public health laboratory to the epidemiology unit. (4.1.3)	☐	1 2 3 4 5 N/A
• Rapidly post subtyping results to PulseNet and other national databases. (4.1.3)	☐	1 2 3 4 5 N/A
• Rapidly report the detection of clusters to PulseNet and foodborne outbreak electronic mailing lists. (4.1.3)	☐	1 2 3 4 5 N/A

Additional ideas:

3. MAKE PLANS TO IMPLEMENT SELECTED CIFOR *GUIDELINES* RECOMMENDATIONS

For each CIFOR Guidelines recommendation selected in the previous steps (or idea formulated by the workgroup), identify who will take the lead in implementing the recommendation and the time frame for implementation (e.g., a specific completion date or whether the change is likely to require short-, mid-, or long-term efforts). If certain actions must precede others, make a note of this and adjust the time frame. In addition, consider factors that could positively or negatively influence implementation of the recommendation and ways to incorporate the recommendation into your agency's/jurisdiction's standard operating procedures.

CIFOR recommendations or other ideas from previous steps	Lead person	Time frame for implementation	Notes (e.g., necessary antecedents, factors that might influence implementation, ways to incorporate the recommendation into standard operating procedures)

One person should be given responsibility for monitoring progress in implementing the above CIFOR Guidelines recommendations. Follow-up should occur at specified checkpoints (e.g., 3, 6, 9, and 12 months after the start of the Toolkit process), and results should be shared with the entire workgroup.

DATE WORKSHEET COMPLETED: _____

NEXT DATE FOR FOLLOW-UP ON PROGRESS: _____