

CIFOR *Guidelines* 2nd Edition Content Review

Questions asked for each chapter's content assessment:

1. Are the major functions of foodborne disease outbreak response in this chapter described and covered adequately and thoroughly? If not, please identify areas that need improvement.
2. Are the recommendations in this chapter clearly conveyed, easy to follow, and sufficiently detailed for implementation? If not, please identify areas that need improvement.
3. Have there been changes in the evidence base and public health practice that need to be reflected in this chapter? If yes, please identify.
4. Are the points and recommendations in this chapter still the currently-held best practices? If not, please identify areas where best practices have changed.
5. Are there additional recommendations not included in this chapter that the Guidelines should address?

Question asked regarding items not addressed in the current version:

- Are there any topics, concepts or practices not addressed in any of the current chapters that should be included in the new edition?

The assessment was widely disseminated to state- and local- level users and was open for 31 days. A total of 43 respondents completed at least one question of the assessment. All questions were optional.

Chapter 1.

1. **Are the major functions of foodborne disease outbreak response in this chapter described a...**
6/7 yes. Comments: Importance of building relationships with external partners prior to outbreaks, ie food safety alliance meeting, exercises, industry association meetings, etc.
2. **Are the recommendations in this chapter clearly conveyed, easy to follow, and sufficient...**
6 yes. Comments: None.
3. **Have there been changes in the evidence base and public health practice that need to be...**
3 no, 1 no opinion, 1 yes. Comments: Just adding/removing any major points that end up changing in specific chapters.
4. **Are the points and recommendations in this chapter still the currently-held best practic...**
4 yes, 1 no opinion. Comments: None.
5. **Are there additional recommendations not included in this chapter that the Guidelines sh..**
2 no, 1 yes. Comments: a.) Procedures or steps to take when there is disagreement between team members, e.g. disagreement between epidemiologists regarding the strength of the evidence linking case-patients to a particular food item.
b.) Increased use of social media data mining for foodborne illness complaint surveillance.
c.) 4.3 Notification/Complaint Systems (pg 30) – consider adding something about the potential for early detection through social data mining/web interfaces (Local Health Department - retail perspective).

Chapter 2.

- 1. Are the major functions of foodborne disease outbreak response in this chapter described a...**
6 yes, 1 no, 1 no opinion. Comments: a.) On page 43 it states, "...foods—particularly dairy, fish, or shellfish—" I have seen that there are many that eat rare or undercooked hamburgers as this is a delicacy.
b.) Suggest some areas to consider for updates: / 1) food authenticity, could be addressed as current issue/concern (2.1.2). / 2) whole genome sequencing should be addressed as trend in surveillance (2.3). Detail FDA GenomeTrakr for example. / 3) Should "attribution" as related to an outbreak investigation be addressed (2.4)?
c.) The section on environmental assessment is far too short. The overall guidelines go into great depth on epidemiological aspects and far too little in the environmental assessment even though EA is often the weakest part of investigations. Don Sharp used to speak about the next moonshot for CIFOR. That should be Environmental assessment!
- 2. Are the recommendations in this chapter clearly conveyed, easy to follow, and sufficient...**
5 yes, 1 no opinion. Comments: a.) Overall, the content is descriptive and well cited. However, I suggest the following in order to increase the utility of this product, economize space and size of document, and minimize cost and material for printing. / 1) Can chapter 1 (Overview) be collapsed into a table or brief bullet/highlight format? This would minimize redundancy. / 2) suggestions for utility, readability: a) suggest graphics especially those that visually show relationships and illustrations, which would replace text heavy content; b) the section headers seem redundant, perhaps apply section headers (e.g. 2.3, 2.4) to vertical chapter headings on side of pages. this would make it easier to browse chapters when flipping through hard copy; c) has single column format ever been considered? double column is busy and hard to read; d) utility, for example if I am looking for an item, I would do a word search in pdf, not actually browse the hard copy; so having a more concise, succinct document would make search quicker while minimizing print materials and production costs.
- 3. Have there been changes in the evidence base and public health practice that need to be...**
3 no, 1 no opinion, 1 yes. Comments: a.) The CIDT portion needs to be updated to include the PCR panel testing and the large increase in identification by this method. The PulseNet section needs to include WGS and WGS may do to have its own section as well.
b.) Some of these practices could be easily illustrated with more simple graphics.
c.) Would add a mention of AMD and WGS to 2.3.3.2 (CIDT paragraph).
- 4. Are the points and recommendations in this chapter still the currently-held best practic...**
5 yes, 1 no opinion. Comments: As mentioned, next-gen sequencing and whole-genome sequencing should be addressed.
- 5. Are there additional recommendations not included in this chapter that the Guidelines sh..**
5 no. Comments: a.) 1. Inclusion of SEDRIC as a real-time surveillance system (in the overview and 2.3). / 2. Training for the team (p. 30) - include 'routine' training / 3. Section 2.2 - consider renaming to the 'Effects of Food-Safety Problems' / 4. (2.3.3.1) - can add misdiagnoses (to either reason b or a new reason) since non-specific signs and symptoms may overlap between

clinical syndromes or diseases. / 5. (2.3.3.2) - 1st sentence, while accurate, portrays CIDs solely as a negative. May be better to list pros and cons. Also, in the 2nd paragraph, include that new tests would need to maintain high levels of PPV/NPV. / 6.(2.4.1) - In the overview, 1st paragraph: 'Foodborne illnesses....have a myriad of causes...and their toxins....' / 7. (2.4.4) - Include transmission from animal-to-person, since it is listed as an example of one of the modes of transmission. / 8. I am not sure where it may be appropriate to include (if at all) the effect natural disasters have in affecting the food/water supply and the potential of food/waterborne transmission.

b.) 2.2.2.2 Foodborne disease complaints/notifications – Consider adding something about new methods of receiving complaints such as mining data from social media sites/web forms. Check URLs.

Chapter 3.

1. Are the major functions of foodborne disease outbreak response in this chapter described a...

4 yes. Comments: For "Section 3.1.2.4. State agencies - food-safety regulatory" should add language to indicate that this type of agency also has similar "role and responsibilities", "resources" and "contribution to outbreak investigation and response" as state health department.

2. Are the recommendations in this chapter clearly conveyed, easy to follow, and sufficient...

4 yes. Comments: Because CIFOR is for foodborne disease, not sure is recommended to refer to Organic and Inorganic chemistry or Radiochemistry under desirable skill for laboratory investigator skills.

3. Have there been changes in the evidence base and public health practice that need to be...

3 no. Comments: a.) Include WGS as subtyping tool and Genome Traker as network
Because of FDA realignment we may need to revisit the language under section 3.1.2.6 - Federal agencies - Food and Drug Administration (Resources)

Consult FSIS if they change their food jurisdiction (include catfish to the list?). Also, under ""resources"" we need to check whether number have changed or not.

For section 3.1.2.8 Cross-agency program - Rapid Response Team, the number of RRT states has changed.

For section 3.1.2.9 Cross-agency program - FERN - we can beef up function of FERN by adding method review for emergency and surveillance assignments for prevention.

b.) Not sure if this right spot but in section 3.1.2.2 mentions molecular fingerprinting(ie PFGE) with move of PulseNet towards WGS and no longer performing PFGE that should maybe be changed. No one knows official stop PFGE date however. Maybe could just say submit data to PulseNet and that would include whatever form it's in? / / In 3.1.2.6 in FDA role maybe mention Genome Trakr here or somewhere as don't think I saw that anywhere / / in 3.2.2.4 possibly mention bioinformatics as desirable skill for laboratory investigator

c.) Use of WGS; listing tablets, cell phones in equipment list in Section 3.3.2.

4. Are the points and recommendations in this chapter still the currently-held best practic...

5 yes. Comments: Mention of WGS

5. Are there additional recommendations not included in this chapter that the Guidelines sh..

2 no. Comments: a.) I wonder if the CoEs should be included as a cross-agency program in 3.1, as they can be an important resource for local and state jurisdictions across the country.

b.) Communication - the need to speak as one voice from each organizational unit should be stressed.

c.) Maybe add MFRPS as Cross-agency program. There is a specific standard (Standard 5) concerning foodborne illness

For section 3.2.2.2.3 Environmental investigator - it should have a note that a Regulator investigator will be involved as well. There are some items described that will involve a regulatory agency.

Typos in Box 3.1 -""SSterile, SRefrigerants, Slabeling, SForms

Add RRT Best Practices Manual under reference material (section 3.3.2.6)

d.) A general comment is WGS is changing the laboratory world as far as testing and subtyping goes. It's changing how laboratory does business but I don't think it affects how to plan and prepare for an outbreak specifically.

e.) Current responsibilities, resources and possible contributions of industry due to FSMA.

f.) pg. 73 – 3.3. Resources Standard outbreak questionnaires – URL change - check all URL

Chapter 4.

1. **Are the major functions of foodborne disease outbreak response in this chapter described a...**
3 yes. Comments: a.) A separate chapter dedicated to laboratory issues is a good idea (to include the imminent senescence of PFGE, importance of AMD, etc.
b.) The use of syndromic is confusing because of syndromic laboratory testing.
c.) The chapter needs updating regarding the use of WGS and the increase in CIDT. WGS is now routine and a major driver of hypothesis generation. WGS will impact TAT and serotyping. Also, with regards to food testing and microbial source tracking, WGS will have a major impact. The increase in CIDT will affect the foodborne timelines and budgets at the PHLs.
d.) There is no mention of social media data mining; not clear on rapidly referring complaints (especially individual complaints) received to other agencies with jurisdiction over the food facility. This can be important if the other agency is already looking into similar complaints.
e.) 4.3.6 – consider social media data mining
2. **Are the recommendations in this chapter clearly conveyed, easy to follow, and sufficient...**
4 yes. Comments: Recommendations are not completely clear cut. This reads like more of an overview of the current system than how to utilize the system.
3. **Have there been changes in the evidence base and public health practice that need to be...**
2 no, 1 yes. Comments: a.) Need to update PFGE to WGS and how will that information impact epidemiology?
b.) The increase in both WGS and CIDT.
4. **Are the points and recommendations in this chapter still the currently-held best practic...**
2 yes. Comments: a.) The complaint system parts should be reviewed in light of recent assessments of and recommendations for complaint systems that were sponsored by CSTE (Dr. Hedberg's work).
b.) From a lab perspective it needs updating.
5. **Are there additional recommendations not included in this chapter that the Guidelines sh..**
2 no. Comments: WGS and CIDT suggestions.

Chapter 5.

1. **Are the major functions of foodborne disease outbreak response in this chapter described a...**
3 yes, 1 substantially, 1 no. Comments: a.) Need info on model practices for sub-cluster investigations (e.g., restaurant sub-clusters within multistate outbreaks). This is not addressed by the Guidelines and is a critical part of commercially distributed food outbreaks. / Also, the informational traceback section could (and should) be enhanced substantially.
b.) The areas that need updating pertain to WGS. WGS now can alter how hypothesis generation is conducted. The resolution of WGS will allow altering both the specificity and sensitivity of case definition during hypothesis generation. There will need to be better integration of results from lab tests on clinical, environmental, and food samples. Furthermore, all of the information exchange and communication activities during outbreak investigations will need to take into consideration the types of data WGS will generate. How does bioinformatics results become incorporated into an outbreak investigation report?
c.) 4.3.6 – consider social media data mining / *standardized tools for reporting / pg 104 – 5.1.1 – retail – consider early generic controls such as cleaning/sanitizing / pg 105 – 5.1.2.2 – employee health assessment – added to Environmental investigations. / Develop case definition – explain what this is /
2. **Are the recommendations in this chapter clearly conveyed, easy to follow, and sufficient...**
4 yes. Comments: What is there is good. Suggest adding another specific example for 5.2.4.1.2 - make a list of restaurants/events/venues mentioned by any of the first few interviewed cases in a cluster and then re-interview old cases with specific objective questions about them, and also include these questions on the first interviews of new cases. / Related to 5.2.4.1.5, other sources of background consumption rate data should be mentioned, e.g., the project mercury/Minnesota CoE data that are available on line.
3. **Have there been changes in the evidence base and public health practice that need to be...**
1 no, 2 yes. Comments: a.) There is a white paper on informational tracebacks that has been available for a couple of years now.
b.) WGS. See #1 above.
4. **Are the points and recommendations in this chapter still the currently-held best practic...**
2 yes, 1 no. Comments: None.
5. **Are there additional recommendations not included in this chapter that the Guidelines sh..**
2 no. Comments: This chapter appears to be pretty much what we are doing.

Chapter 6.

1. **Are the major functions of foodborne disease outbreak response in this chapter described a...**
3 yes. Comments: a.) Include at least a brief section on food irradiation.
b.) 6.2.1.2 – add general cleaning and noro control measures (non - specific measures for any investigation - best practices)
2. **Are the recommendations in this chapter clearly conveyed, easy to follow, and sufficient...**
3 yes. Comments: None.
3. **Have there been changes in the evidence base and public health practice that need to be...**
3 no. Comments: None.
4. **Are the points and recommendations in this chapter still the currently-held best practic...**
3 yes. Comments: Use of NEARS for long term data collection and analysis to determine where possible changes in food safety practices are needed.
5. **Are there additional recommendations not included in this chapter that the Guidelines sh..**
2 no. Comments: Procedures when a company or industry notification to the public conflicts with official public notification from the regulatory agency particularly with social media.

Chapter 7.

1. Are the major functions of foodborne disease outbreak response in this chapter described a...

3 yes. Comments: a.) Sub-cluster investigations and informational tracebacks should be discussed in this chapter as well. Sub-cluster investigation results should be reported in detail to CDC and other states, as results can influence other jurisdictions' investigations. Informational tracebacks are basically always multijurisdictional, and historically (and currently) have issues and so deserve focus in this chapter.

b.) Overall, the material in this chapter can and should be incorporated into other chapters and that this chapter could go away (see my note below). / It's very important that federal food regulatory agencies be notified of any outbreak associated with the products they regulate. That should be emphasized early in the guidelines--reporting to relevant agencies should be covered in the Surveillance chapter.

2. Are the recommendations in this chapter clearly conveyed, easy to follow, and sufficient...

3 yes. Comments: Notifying federal food regulatory agencies should be included in each row in Table 7.3 (it's missing from the multiple restaurant ones).

3. Have there been changes in the evidence base and public health practice that need to be...

3 no. Comments: None.

4. Are the points and recommendations in this chapter still the currently-held best practic...

3 yes. Comments: a.) The guidelines should adequately address multi-jurisdictional information sharing. I know that's covered in the guidelines somewhere. These should be carefully looked at to see if there have been changes. For example, there have been some recent changes in this regard in FSIS (e.g. expedited FOIA request).

b.) Local health departments are also able to sign 20.88 agreements with FDA.

5. Are there additional recommendations not included in this chapter that the Guidelines sh..

2 no. Comments: a.) "Other" notes that apply throughout the guidelines: / 1) When "USDA" is mentioned, this usually means "FSIS". I suggest the acronyms "USDA-FSIS" or even just "FSIS" (perhaps the agency is well enough recognized now to be known by that acronym without the prefix "USDA-") consistently throughout. It would be rare to refer to the entire USDA as a department (just like we don't generally refer to "DHHS"); references to FSIS should be more specific than that. If the intention is to refer to a different agency within USDA, such as APHIS, that agency should be specifically referenced. / 2) With a few exceptions, each time FSIS is mentioned, FDA should be mentioned, and vice-versa.

b.) / Consolidate and reorder chapters (a thorough table of contents and index will help folks navigate): / 1) Overview/Introduction / 2) Planning (would include the current planning chapter plus legal planning chapter [9]) / 3) Surveillance (would combine the two current surveillance chapters; new content for WGS, CIDT, consumer complaint monitoring systems, etc. would be incorporated here and throughout, as appropriate) / 4) Investigation (the content in the multi-jurisdictional chapter would be incorporated here and throughout, as appropriate) / 5) Control and Prevention (should adequately cover short-term actions, as well as longer-term actions/process enhancements/policy improvements/AARs) / 6) Performance Indicators / ---- /

"Other" notes that apply throughout the guidelines: / 1) When "USDA" is mentioned, this usually means "FSIS". I suggest the acronyms "USDA-FSIS" or even just "FSIS" (perhaps the agency is well enough recognized now to be known by that acronym without the prefix "USDA-") consistently throughout. It would be rare to refer to the entire USDA as a department (just like we don't generally refer to "DHHS"); references to FSIS should be more specific than that. If the intention is to refer to a different agency within USDA, such as APHIS, that agency should be specifically referenced. / 2) With a few exceptions, each time FSIS is mentioned, FDA should be mentioned, and vice-versa.

Chapter 8.

- 1. Are the major functions of foodborne disease outbreak response in this chapter described a...**
4 yes. Comments: a.) Whole genome sequencing needs to be mentioned, and metrics should be developed.
b.) Do NOT include actual numbers for the metrics/indicators, but keep them separately in a different document.
- 2. Are the recommendations in this chapter clearly conveyed, easy to follow, and sufficient...**
5 yes. Comments: None.
- 3. Have there been changes in the evidence base and public health practice that need to be...**
3 no. Comments: a.) The funding has switched from PHEP back to ELC for Enteric bacteriology.
b.) Whole genome sequencing (WGS) needs to be captured and metrics created.
- 4. Are the points and recommendations in this chapter still the currently-held best practic...**
3 yes. Comments: a.) CIFOR Performance measure #9 PHEP E. coli O157:H7 and Listeria subtyping interval. While it may still be a good performance measure, I do not believe it is any longer in the PHEP reporting guidelines (and the funding has been removed as well).
b.) PFGE is transitioning to WGS.
- 5. Are there additional recommendations not included in this chapter that the Guidelines sh..**
4 no. Comments: WGS.

Chapter 9.

1. **Are the major functions of foodborne disease outbreak response in this chapter described a...**
3 yes, 1 not really. Comments: The only function change is the more use and impact of WGS and CIDs on public health labs and foodborne disease outbreak response. See #5 for more detailed examples.
2. **Are the recommendations in this chapter clearly conveyed, easy to follow, and sufficient...**
3 yes, 1 no. Comments: None.
3. **Have there been changes in the evidence base and public health practice that need to be...**
2 no, 1 yes. Comments: None.
4. **Are the points and recommendations in this chapter still the currently-held best practic...**
4 yes. Comments: None.
5. **Are there additional recommendations not included in this chapter that the Guidelines sh..**
3 no. Comments: • The document is still quite relevant and up to date with respect to the legal aspects of FDO / • (Section 9.1.2.4): We may want to be less specific regarding the example for “submission of isolates for PFGE” and either say for further genetic characterization or more specific and state PFGE and/or WGS; there may also be use in including an example for the requirement for submission of broths or specimens that test positive by CIDs / • (Section 9.2.2): in the last couple of sentences, we should indicate that federal response and laws would also be applicable especially if it affects multiple states. / • (Section 9.3.1): In the last sentence there is a typo I believe. “Should locus be focus”? / • (Section 9.3.2): Will someone be verifying the CFR references listed? / • (Section 9.3.2.1): Hasn’t the FFDCA has been updated since 2007? / • (Section 9.3.2.2): Bullet on Response: I believe there are six not five Food Safety Centers of Excellence. / • (Section 9.4.2): The quote in the second paragraph beginning Laboratory specimens.....”Everyone handling the sample.....in court” is quite awkward and difficult to understand as written. /

Appendix.

1. Are there any suggested changes to the appendices?

3 no. Comments: a.) Appendix 3 should be updated with newer resources (e.g., Informational traceback white paper, maybe CoE all products website, etc).

b.) suggest listing glossary in table format similar to proposals to save space.

c.) Incorporate info developing with the PEW Root Cause Analysis project. See this web link:

<http://www.resolv.org/site-foodsafety/phase-2-workshops/workshop-root-cause-analysis/>

Are there any topics, concepts or practices not addressed in any of the current chapters that sho...

Structural recommendations:

- a.) Consolidate and reorder chapters (a thorough table of contents and index will help folks navigate): / 1) Overview/Introduction / 2) Planning (would include the current planning chapter plus legal planning chapter [9]) / 3) Surveillance (would combine the two current surveillance chapters; new content for WGS, CIDT, consumer complaint monitoring systems, etc. would be incorporated here and throughout, as appropriate) / 4) Investigation (the content in the multi-jurisdictional chapter would be incorporated here and throughout, as appropriate) / 5) Control and Prevention (should adequately cover short-term actions, as well as longer-term actions/process enhancements/policy improvements/AARs) / 6) Performance Indicators / ----- /
- b.) I would also encourage the group to consider a chapter specifically dedicated to the environmental assessments. There is enough subject matter on this topic to make a stand-alone chapter in my opinion (contributing factors, environmental antecedents, food flows, field interviews, NEARS, etc.) and many of these topic are non-existent in the current version.
- c.) Can chapter 1 (Overview) be collapsed into a table or brief bullet/highlight format? This would minimize redundancy. /

Content recommendations:

- d.) Next-gen/whole genome sequencing as mentioned. This is broad, cross-cutting topic.
- e.) More about tracebacks, recalls, communication best practices, environmental assessment best practices

Editorial recommendations:

- f.) Throughout the document, develop more active language for readers who have never worked an outbreak. This is the audience for the guidelines. Wherever possible, reference tools (or reference the toolkit) for line lists, restaurant assessments, etc. (tools that are practical for local health departments in my case) so the user will come to the Guidelines as a primary source for best resources.
- g.) When "USDA" is mentioned, this usually means "FSIS". Suggest the acronyms "USDA-FSIS" or even just "FSIS" (perhaps the agency is well enough recognized now to be known by that acronym without the prefix "USDA-") consistently throughout. It would be rare to refer to the entire USDA as a department (just like we don't generally refer to "DHHS"); references to FSIS should be more specific than that. If the intention is to refer to a different agency within USDA, such as APHIS, that agency should be specifically referenced. / 2) With a few exceptions, each time FSIS is mentioned, FDA should be mentioned, and vice-versa.
- h.) Suggestions for utility, readability: a) suggest graphics especially those that visually show relationships and illustrations, which would replace text heavy content; b) the

section headers seem redundant, perhaps apply section headers (e.g. 2.3, 2.4) to vertical chapter headings on side of pages. this would make it easier to browse chapters when flipping through hard copy; c) has single column format ever been considered? double column is busy and hard to read; d) utility, for example if I am looking for an item, I would do a word search in pdf, not actually browse the hard copy; so having a more concise, succinct document would make search quicker while minimizing print materials and production costs.