

# Foodborne Illness Outbreak Detection, Investigation, and Response: Competencies for Environmental Health Professionals

## Overview

This competency set represents the set of knowledge and skills desirable for environmental health professionals engaged in foodborne/enteric illness outbreak detection, investigation, and response at the state and local level. These competencies build on existing competencies for local environmental health practitioners (available [here](#)) and the baseline knowledge and skills required to pass the National Environmental Health Association's (NEHA) Registered Environmental Health Specialist/Registered Sanitarian (REHS/RS) exam.

## Tiers

This competency set is organized into three tiers which progress from lower to higher levels of skill complexity.

- Tier 1 competencies apply to entry level environmental health professionals or environmental health professionals who do not routinely participate in outbreak investigations. Environmental health professionals in Tier 1 should understand how foodborne illness outbreaks are detected and investigated and participate in an environmental assessment with guidance.
- Tier 2 competencies apply to environmental health professionals who routinely participate in outbreak investigations. Environmental health professionals in Tier 2 should have the knowledge and skills required to conduct all aspects of the outbreak investigation.
- Tier 3 competencies apply to environmental health professionals in program management, supervisory or managerial roles. Environmental health professionals in Tier 3 improve the conduct of outbreak investigation at their agency.

## Intended Use

Developed by the Integrated Food Safety Centers of Excellence (CoEs), the primary intended use of these competencies is to guide the development and evaluation of curricula for CoE trainings and resources. This competency set can also be used to help assess workforce knowledge and skills, identify training needs, develop workforce development and training plans, and in writing job descriptions.

The purpose of the tier framework is to help environmental health professionals identify relevant competencies. This tier framework is a simplification of the diversity that exists in the public health workforce and these categories may not represent all environmental health professionals. In some agencies, one individual may conduct work across multiple tiers. Conversely, some agencies may not have all three tiers represented. Additionally, some environmental health professionals may need to be competent in epidemiology; these individuals should consider reviewing the "Foodborne Illness Outbreak Detection, Investigation, and Response: Competencies for Epidemiologists", which complement the competencies listed here.

	Topic area	Tier 1	Tier 2	Tier 3
COM PETE NCY 1	<b>Outbreak detection</b>	Describes the role of surveillance systems in detecting foodborne illness outbreaks	Uses surveillance systems to detect to foodborne illness outbreaks	Improves surveillance systems to make foodborne outbreak detection timelier and more efficient
COM PETE NCY 2	<b>Outbreak investigation team: roles and responsibilities</b>	Explains the role of environmental health professionals, epidemiologists, microbiologists, and other members of the outbreak investigation team <sup>1</sup> during an outbreak investigation	Collaborates with other members of the outbreak investigation team on activities undertaken as part of an outbreak investigation	Leads activities undertaken as part of an outbreak in collaboration with partners at local, state and federal agencies
COM PETE NCY 3	<b>Outbreak investigation team: partnerships and communication</b>	Describes the importance of partnerships and ongoing communication with epidemiologists, microbiologists, and other professionals engaged in outbreak detection and response	Maintains partnerships and ongoing communication with epidemiologists, microbiologists, and other professionals engaged in outbreak detection and response	Builds partnerships with local, state and federal agencies engaged in outbreak detection and response

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<sup>1</sup> Outbreak investigative teams are made up of a variety of professionals from local, state, territorial and federal levels, including: epidemiologists, laboratorians, environmental health professionals, regulatory compliance officers and inspectors, and health communication specialists. A team may add other professionals as the investigation proceeds.

<p><b>COM PETE NCY 4</b></p>	<p><b>Environmental assessments</b></p>	<p>Describes the components of an environmental assessment</p>	<p>Performs foodborne illness outbreak environmental assessments</p>	<p>Continuously improves the process for conducting foodborne illness outbreak environmental assessments</p>
<p><b>COM PETE NCY 5</b></p>	<p><b>Contributing factors</b></p>	<p>Lists types of contributing factors by causative agent or food vehicle</p>	<p>Uses available information to develop hypotheses about the causative agent, implicated food, and contributing factors in preparation for the site visit</p>	<p>Mentors others on the use of epidemiological, laboratory and other data when developing hypotheses about the causative agent, implicated food, and contributing factors in preparation for the site visit</p>
<p><b>COM PETE NCY 6</b></p>	<p><b>Observation and Record Review</b></p>	<p>Lists processes, practices, and records to observe and review during a site visit</p>	<p>Selects appropriate processes and practices to observe and records to review during a site visit given a specific outbreak scenario</p>	<p>Mentors others on appropriate processes and practices to observe and records to review during a site visit given a specific outbreak scenario</p>
<p><b>COM PETE NCY 7</b></p>	<p><b>Interview skills</b></p>	<p>Lists the types of information required when interviewing managers and staff during a foodborne illness outbreak environmental assessment</p>	<p>Interviews managers and staff during a foodborne illness outbreak environmental assessment to obtain relevant information</p>	<p>Develops interview guides and techniques for interviewing managers and staff during a foodborne illness outbreak environmental assessment</p>
<p><b>COM PETE NCY 8</b></p>	<p><b>Specimen testing</b></p>	<p>Lists the types of sampling, sampling tools and other equipment used as part of a foodborne illness outbreak environmental assessment</p>	<p>Collects food, environmental, and clinical samples during a foodborne illness outbreak environmental assessment and describes different testing methods</p>	<p>Develops and improves sampling guides and model practices, requests appropriate tests/test methods and interprets test results</p>

COM PETE NCY 9	<b>Critical thinking skills</b>	Summarizes multiple sources of information from a foodborne illness outbreak environmental assessment	Analyzes information from a foodborne illness outbreak environmental assessment to identify contributing factors and root causes or environmental antecedents	Mentors others on the use of critical thinking skills and systems theory to identify contributing factors and root causes or environmental antecedents
COM PETE NCY 10	<b>Control measures</b>	Lists appropriate short- and long- term control measures	Recommends appropriate short- and long-term control measures given a specific outbreak scenario	Evaluates the impact of short- and long-term control measures
COM PETE NCY 11	<b>Legal authority</b>	Describes the legal authority of state/local agencies during a foodborne illness outbreak	Carries out the legal authority of state/local agencies during a foodborne illness outbreak	Evaluates the need to use state/local legal authorities during a foodborne illness outbreak, in consultation with other local, state and federal agencies
COM PETE NCY 12	<b>Traceback investigations</b>	Explains the purpose of traceback and trace forward investigations and the roles of local, state and federal agencies	Conducts traceback and trace forward investigations in collaboration with state and federal partners	Facilitates and advises on traceback and trace forward investigations in collaboration with other state and federal agencies
COM PETE NCY 13	<b>Outbreak communication</b>	Recognizes the importance of communicating with external partners and stakeholders	Communicates results of the environmental assessment to external partners and stakeholders	Responds to requests from the media, external partners and stakeholders for information on the outbreak investigation

<b>COM PETE NCY 14</b>	<b>Quality Improvement</b>	Explains the importance of evaluation and continuous quality improvement	Implements strategies for evaluation and continuous quality improvement	Develops strategies for evaluation and continuous quality improvement
<b>COM PETE NCY 15</b>	<b>Report Writing</b>	Lists the items that would be included in a written summary of a foodborne illness outbreak environmental assessment	Prepares a foodborne illness outbreak environmental assessment report	Mentors staff on effective report writing during a foodborne illness outbreak investigation
<b>COM PETE NCY 16</b>	<b>Outbreak surveillance reporting</b>	Describes the importance of reporting outbreaks to national surveillance	Assists in the reporting of outbreaks to national surveillance	Improves the quality and completeness of outbreak data reported to national surveillance