E-Learning for Foodborne Illness Outbreak Environmental Assessments

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Overview

- **Background**

- **Virtual World Training**
  - Module I
  - Phase II

- **Participation**
Need and Goal

BACKGROUND
Foodborne Illness Outbreak Environmental Assessments

- Describes how the environment contributes to the introduction and or transmission of agents that cause illness

- Objectives of the assessment
  - Identify contributing factors
  - Identify environmental antecedents
  - Generate recommendations for informed interventions
Using Environmental Assessments to Investigate Illness Outbreaks

- Environmental Health Specialists are accustomed to look for violation of regulations
  - not contributing factors and their environmental antecedents
  - Performing an environmental assessment (EA) requires a different mindset than other environmental food safety activities

- No two outbreaks are alike
  - No single ‘checklist’ applies to all environmental assessments

- Conducting an EA requires a complex set of knowledge and skills including the ability to apply ‘critical thinking’

- Training must promote development of competency in the field and not just the acquisition of knowledge
The Need for Training

- In 2001 Selman and Green surveyed local and state Environmental Health Specialists (EHS) and found:
  - EHS focus on pathogens during outbreaks instead of contributing factors and their environmental antecedents.
  - A lack of communication between epidemiologist and EHS was found to be a barrier to EHS active engagement in foodborne illness outbreak environmental assessments.
  - Local EHS staff require training because they are not involved in outbreaks often enough to attain competency in environmental assessments.
  - EHS were in need of a basic training in how to conduct foodborne illness outbreak environmental assessments.

Goal of this Training Effort

- Use cutting-edge e-learning technologies to develop competency with Foodborne Illness Outbreak Environmental Assessments and deliver training free of charge over the Internet to enhance global food safety
The Cognitive Domain

- Involves knowledge and the development of intellectual skills

- Includes 6 categories of behavior
  - Knowledge (recall data or information)
  - Comprehension (understanding the meaning)
  - Application (use a concept in a new situation)
  - Analysis (separate materials into component parts)
  - Synthesis (build a pattern from diverse elements)
  - Evaluation (make judgments)
Incorporation of ‘Gaming’

- Each virtual learning experience scenarios is framed as a forensic investigation mystery of an outbreak

- Participants decide
  - Who to interview
  - What topics to interview about
  - Which actions to take
  - What observations to perform and samples to collect

- At end, learners must identify contributing factors and environmental antecedents

- Actions and conclusions are tracked and evaluated

- Learners receive individual feedback on results
Analysis of Learner Performance

- Learner receives individualized feedback on:
  - Interview effectiveness
    - Did the learner choose the correct questions?
  - Interview efficiency
    - Did the learner choose the questions in the correct order?
  - Observational skills
    - Did the learner find all the important embedded clues in the environment?
  - Critical thinking
    - Did the learner correctly identify contributing factors and environmental antecedents
E-Learning on Environmental Assessments of Foodborne Illness Outbreaks

VIRTUAL WORLD TRAINING
Purpose of Module 1

- To provide participants with the skills and knowledge to participate effectively in an environmental assessment of a foodborne illness outbreak at a retail point of service.
M1, L1: Your Assignment

M1, L2: Overview of Foodborne Illness Outbreak Environmental Assessments

M1, L3: Interviewing

M1, L4: Observation

M1, L5: Sampling

M1, L6: Organizing Assessment Information

M1, L7: Critical Thinking

M1, L8: Concluding actions
TRAINING DEMO
PHASE II – INCORPORATING NEW MODULES
Expanded Purpose of Training based on new FDA and CDC funding

- To demonstrate how an environmental assessment is performed in a Manufactured Food setting
- To demonstrate the process followed to perform a Traceback investigation
- To develop basic awareness of Food Defense concepts and principles.
- Expand the target audience
  - Environmental Health Specialists operating at the local level
  - Now also including State and Local Environmental Health Specialists, Department of Agriculture Inspectors, FDA Investigators and FDA Consumer Safety Officers
Module 2 will be developed to enable participants to practice using EA skills within the context of a simulated outbreak and/or observe how an environmental assessment and/or traceback is conducted. At this point, we expect that the module will include three types of scenarios:

- Outbreak linked to a retail point of service
- Outbreak linked to a manufactured food setting
- Traceback of the manufactured food outbreak
Next Modules

- Module 3 will be developed to provide basic awareness training on food defense concepts and principles
  - The content for this module will be based on the new FDA Food Defense E-learning program titled “FDA Food Defense 101”, and specifically the lesson titled “Food Defense Awareness for the Food Professional”
  - After completing this Module, individuals who wish to learn more about Food Defense Concepts and Principles will be directed to the full program available on the FDA web site at [http://www.fda.gov/Food/FoodDefense/ToolsEducationalMaterials/ucm353774.htm](http://www.fda.gov/Food/FoodDefense/ToolsEducationalMaterials/ucm353774.htm)
M1, L1: Your Assignment

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M1, L5: Sampling

M1, L6: Organizing Assessment information

M1, L7: Critical thinking

M1, L8: Concluding actions

M2: Simulated Outbreak-Guided Walkthrough

M3: Basic awareness training on food defense concepts and principles
PARTICIPATING IN THE TRAINING
Information

- www.cdc.gov/nceh/ehs
  - Provides information about e-Learning on Environmental Assessments of Foodborne Illness Outbreaks and NVEAIS

- Registration information
  - Complete the registration
  - Take the pre-test
Thank you
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http://www.cdc.gov/nceh/ehs/EHSNet/index.htm

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The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.