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New Food Safety Training Opportunity Using Cutting Edge Technology!

Editor's Note: NEHA strives to provide up-to-date and relevant information on environmental health and to build partnerships in the profession. In pursuit of these goals, we feature a column from the Environmental Health Services Branch (EHSB) of the Centers for Disease Control and Prevention (CDC) in every issue of the *Journal*.

In this column, EHSB and guest authors from across CDC will highlight a variety of concerns, opportunities, challenges, and successes that we all share in environmental public health. EHSB's objective is to strengthen the role of state, local, and national environmental health programs and professionals to anticipate, identify, and respond to adverse environmental exposures and the consequences of these exposures for human health. The services being developed through EHSB include access to topical, relevant, and scientific information; consultation; and assistance to environmental health specialists, sanitarians, and environmental health professionals and practitioners.

The conclusions in this article are those of the author(s) and do not necessarily represent the views of the Centers for Disease Control and Prevention.

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Because of constant advances in laboratory methods, more foodborne illness outbreaks are recognized and investigated each year. Environmental health specialists are trained to conduct the environmental assessment of foodborne illness outbreak investigations. As such, they play a critical role in understanding the environmental causes of a specific outbreak. They also assist in preventing future outbreaks.

Yet environmental health specialists don't investigate foodborne illness outbreaks every

day. These outbreaks generally occur irregularly. And long periods of disuse can erode the knowledge and skills needed for outbreak investigations. Training environmental health specialists and regulators requires an efficient mechanism. They need to be ready to conduct and participate effectively in environmental assessments of foodborne illness outbreaks. That means they need access to an efficient method of refresher training.

The Centers for Disease Control and Prevention (CDC)—with the help of their

Environmental Health Specialists Network (EHS-Net) grantees, the U.S. Food and Drug Administration, and the U.S. Department of Agriculture—has developed an e-learning training course to address this need. EHS-Net is a collaborative forum of local, state, and federal food program officials who work toward understanding the environmental causes of foodborne and waterborne disease.

The purpose of this e-learning course is to provide training on how to use a systems approach in foodborne-illness-outbreak environmental assessments (FIOEA). The course also provides skills essential for the assessment's success. The e-learning program objectives are to provide participants with the in-depth skills and knowledge required to

- investigate foodborne illness outbreaks as a member of the larger outbreak response team,
- identify an outbreak's contributing factors and environmental antecedents, and
- recommend appropriate control measures.

This e-learning program consists of self-paced, interactive multimedia instruction delivered over the Internet. The primary audience includes approximately 30,000 environmental health specialists and regulators spread across 3,000 local agencies. That audience also includes territorial, state, and federal food safety program officials in the U.S. The secondary audience is comprised of public health officials, the business community, academia, the medical community, and others interested in FIOEAs.

The course has two sections. Section One addresses the "Foundation Skills" required to conduct a FIOEA. Lessons include the following:

- Course Introduction,
- Overview of FIOEA,

FIGURE 1

Simulated Interview With Food Worker



- Interviewing,
- Observation,
- Sampling,
- Organizing Assessment Information,
- Critical Thinking, and
- Concluding Actions.

Section Two introduces the learner to a virtual environment in which she or he practices Section One foundation skills.

Section One is scheduled for launch in September 2011. Section Two will launch as funds become available. Both sections are free of charge to anyone with Internet access and a relatively low bandwidth connection (DSL or equivalent).

The estimated training duration for Section One is 10 to 12 hours (20 hours for both sections). The program uses the lat-

est e-learning technologies to make training compelling, engaging, and instructionally effective. For example, the foundation lessons are presented in the context of a simulated virtual classroom. The presenter is primarily an animated character representing an environmental health specialist skilled in outbreak investigations. At appropriate points, the course covers the need to consult with colleagues in epidemiology and in the laboratory. The training will model the collaboration and teamwork that should characterize an outbreak investigation team.

The lessons include extensive opportunities to practice foundation skills. For example, in the interviewing lesson, the learner conducts a simulated interview with an animated character representing a food worker (Figure 1). To

conduct the interview, the learner selects from an extensive bank of more- or less-appropriate question choices. At the conclusion of the exercise, the learner receives feedback on the effectiveness of her or his selections and interview technique. In the observation lesson, to investigate potential contributing factors to an outbreak event, the learner explores a virtual 3-D food establishment.

In Section Two, learners apply foundation skills within the context of simulated outbreak situations. 3-D views of food establishments populated by animated characters represent realistic owners, managers, supervisors, and food workers. The learner will “enter” each virtual environment and participate in the investigation. The learner will conduct interviews, perform observations, take samples, and interact with other members of the outbreak investigation team as appropriate to the situation. The learner has to apply critical thinking skills throughout to reach appropriate conclusions and to make appropriate recommendations.

The training program design places it at the forefront of the e-learning industry. It leverages techniques used successfully by the military and by medical communities. The training program’s complex processes and behaviors develop competency. When completed and fully deployed, the course will have the potential to improve dramatically environmental health professionals’ ability to conduct FIOEAs and to prevent future outbreaks.

For information on training participation visit www.cdc.gov/nceh/ehs/.

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