Fundamentals of Epidemiology and Field Investigation

How to Use the "Train the Trainer" Toolkit

Toolkit Developed by:

CONNECTICUT PARTNERSHIP
For Public Health Workforce Development

Adapted for Distribution by:

YALE CENTER FOR PUBLIC HEALTH PREPAREDNESS

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Toolkit Contents

Please print out this page and use to review the contents of the CD-ROM

Table 1: List of CD Toolkit Contents

File Name	File Type	Description
Located in Folder: Lecture		
Intro to Epi Outbreak Investigation 3.0	MS PowerPoint 2003	Two-part lecture (109 slides) with instructor notes: 1. Introduction to Epidemiology 2. Outbreak Investigations: Steps and Tools *Note: Slides 7,8, 9,107,108 (green background) contain CT specific content and can be modified for your state or locality.*
Located in Folder: Group Exercises		
Exercise 1 Case Reports	MS Word 2003	Learners use case reports to create a line listing
Exercise 2 Learner Materials	MS Word 2003	Case study: Learners identify the appropriate measure of association, calculate and interpret their results
Exercise Slides 3.0	MS PowerPoint 2003	Slide set (total 14 slides) containing the two group exercises and exercise answers
Instructor Answer Key	MS Word 2003	Instructor answer key (answers to exercises 1 & 2
Located in Folder: Learner Handouts		
Glossary of Epidemiologic Terms	Adobe Acrobat 7.0	Glossary of basic epidemiological terms for distribution to learners from CDC EXCITE
Located in Folder: Testing Materials		
Epi Pre-Test	MS Word 2003	10 question learner pre-course assessment
Epi Post-Test	MS Word 2003	10 question learner post-course assessment (note: same 10 questions as pre-test)
Epi Answer Key	MS Word 2003	10 question learner assessment answer key
Located in Folder: Trainer Resources		
Introduction to Epi	Adobe Acrobat 7.0	CDC EXCITE instructional materials
How to Investigate an Outbreak	Adobe Acrobat 7.0	CDC EXCITE instructional materials
Fear of Bioterrorism	Adobe Acrobat 7.0	Suggested reading: Dworkin MS, Ma X, Golash RJ. Fear of bioterrorism and implications for public health preparedness. Emerging Infectious Diseases. 2003 April Vol. 9(4).

Training Program Overview

Intended Audience:
Environmental health professionals or other frontline professional public health workers practicing in state and local health departments

Purpose of Course:
The program has a twofold purpose: 1) to develop a sustainable infrastructure of non-professional trainers out in the field and 2) to improve the competency of frontline workers in the core area of epidemiology

Key Features:
- Half day "face-to-face" training format
- Standardized curricula for "training the trainers" and field delivery by trainers
- Field tested product
- Instructor resources

Teaching Format:
Face-to-face lecture

Length of Program:
Total delivery time in the field is approximately 4 hours (half day)

Technical Requirements:
Computer or laptop with projector
Software: MS PowerPoint, MSWord, Adobe Acrobat. Adobe Reader is available for free at: http://www.adobe.com/products/acrobat/readstep2.html

Training Level:
Awareness to knowledgeable

Content Source:
The source for the training content is the Centers for Disease Control and Prevention, National Center for Chronic Disease Control and Prevention Excellence in Curriculum Integration through Teaching Epidemiology (EXCITE) [URL: http://www.cdc.gov/excite/index.htm]. The EXCITE curricula was adapted by the Connecticut Partnership for use in a lecture format as a PowerPoint presentation and group exercises.

Course description:
This training is designed as a brief refresher on the fundamentals of epidemiology and field investigations. It can also be used as an introductory training. Topics covered include:
- Basic principles and methods of epidemiology as they relate to scientific inquiry
- Use of epidemiological approaches for problem solving in public health
- Basic steps in field investigations
- Roles of epidemiologists and environmental health professionals in detection, control, and prevention of community health problems

Training Program Overview (continued)

Learning Objectives:

At the end of the training program, learners will be able to:

- Describe the different categories of epidemiology
- Describe the types of epidemiological studies
- Define basic terms and elements in disease transmission
- Explain why health agencies investigate reported outbreaks
- List the steps in an outbreak investigation
- Describe how to determine whether an epidemic actually exists
- Define and create a "line listing"

Course Outline:

Course Component	Time
Pre-test	10 minutes
Lecture Part 1: Introduction to Epidemiology for non-Epidemiologists • Epidemiology Defined • Epidemiological Studies • Disease Transmission	60 minutes
Lecture Part 2: Outbreak Investigations: Steps and Tools • Why Investigate Outbreaks • Ten Steps in an Outbreak Investigation 1. Prepare for field work 2. Establish the existence of an outbreak 3. Verify the diagnosis 4. Define and identify cases 5. Describe and orient the data in terms of time, place, and person 6. Develop hypotheses 7. Evaluate hypotheses 8. Refine hypotheses and carry out additional studies 9. Implement control and prevention measures 10. Communicate findings	90 minutes
Group Exercises • Cleveland McKay Wedding: Creating a Line Listing • Grocery Store Worker Rash: Calculating Measure of Association	60 minutes
Post-test	10 minutes

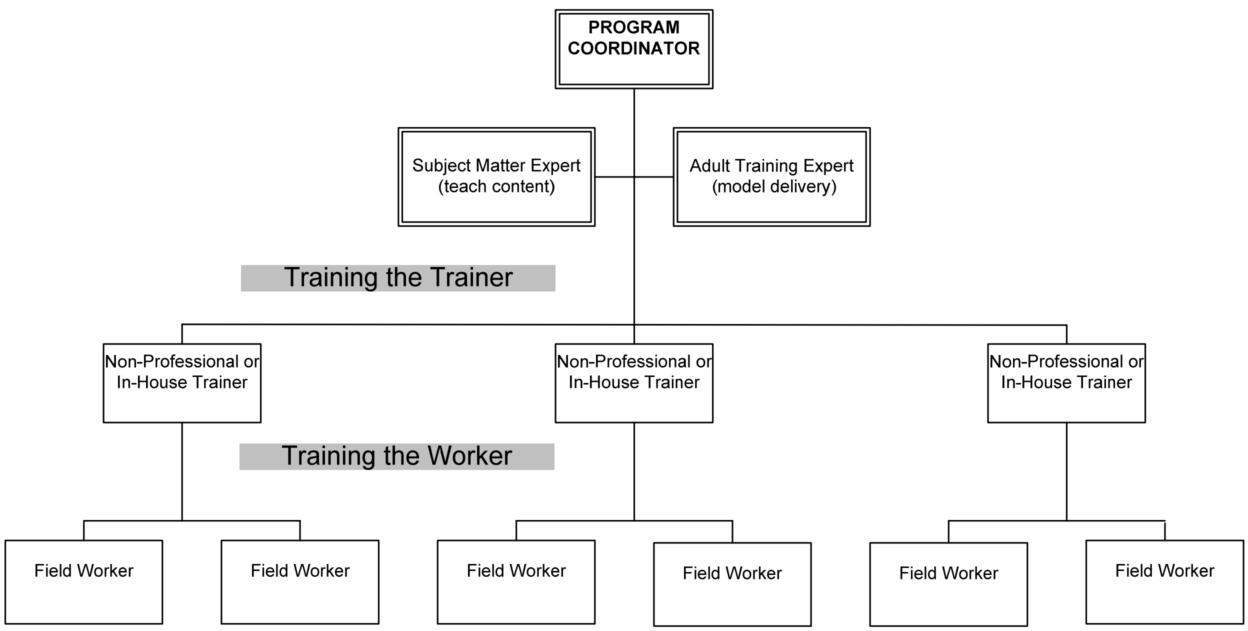
Evaluation:

Learner increase in knowledge is measured though a pre- and post-test. There are ten multiple choice questions. The pre- and post-test questions are the same.

Process Overview: Training the Trainers to Deliver the Training

The “train the trainer” program model developed by the Connecticut Partnership and supported by this toolkit consists of two major phases. First, a group of trainers are trained to the toolkit content. Then, this group of trainers delivers the training out in the field. Figure 1 contains a chart illustrating the program structure.

Figure 1



Implementing the Program Model: Suggested Steps

Step1: Identify a Program Coordinator

This individual should coordinate all phases of the training program, including identification of experts to support the training program; identification of a group of non-professional trainers; administration of the program to train the non-professional trainers and oversight of the field delivery and program evaluation. See description of these phases below.

Step 2: Identify Experts to Support Training Program

A subject matter expert is required to train the trainers to the content and to serve as a resource on the topic. In Connecticut, two subject matter experts were utilized: an epidemiologist and a professor with experience teaching introductory epidemiology on the graduate level. To assist trainers with teaching strategies (i.e., presentation standards, managing group exercises, fielding questions and learner participation), a master trainer can be used. If experienced “in-house” trainers are recruited for the program (see Step 3), a master trainer may not be needed.

Step 3: Identify Cohort of Trainers

Trainers can be recruited from within state and local public health agencies and public health professional associations. In Connecticut, trainers were recruited from the Connecticut Environmental Health Association. These individuals do not need to be experts in the subject area. Ideally, the trainers should have some experience teaching or training in either a community or academic setting. However, this is not mandatory. In Connecticut, the cohort of non-professional trainers recruited for the program came with a wide range of training experience.

Implementing the Program Model: Suggested Steps (continued)

Step 4: Train the Trainer

Trainers should be trained to the content and use of the toolkit by the subject matter expert (SME) and a master trainer. Toolkits should be provided to trainers in advance of the training session for their review and study. A list of the toolkit contents can be found on page 3. A sample "train the trainer" agenda is provided in Figure 2 below. Note: Trainers may also need training on use of equipment (i.e., use of laptops and projectors in remote locations) and software (MS PowerPoint).

Figure 2

Sample "Train the Trainer" Agenda

A. Overview of module
- What will the training look like in the field?
- Purpose and learning objectives
- Components of module and schedule: lecture, exercise and tests

B. Training to content and "modeling" of training delivery
- Presentation of training slides
- Questions on content and/or learning objectives
- Presentation tips and ideas

C. Walk through of the group exercises
- Presentation of slides
- Questions on exercises
- Presentation tips and ideas

D. Practice Presenting: Break outs
- Participants will be asked to present segments of the lecture slides
- Feedback on presentations

E. Wrap-up
- Roll-out issues
- Identification of any additional trainer needs

Implementing the Program Model: Suggested Steps (continued)

It is strongly recommended that trainers with limited or no teaching experience also be provided with teaching methodology training. This training can be facilitated by the program's master trainer (see Step 2). In Connecticut, this training covered the following topic/skill areas:

- principles in adult learning
- audience analysis
- delivery of presentations
- using professional delivery standards
- how to handle difficult learners
- controlling question and answer sessions

Step 5: Trainers Deliver Program in the Field

Field delivery of the program should be administered through the program coordinator to assure standardization in program delivery, provision of learner materials and evaluation. The program can be delivered by teams of two trainers. A more experienced trainer can be teamed with a less experienced trainer, for example. Trainers may also find it helpful to have assistance with registration and administrative functions, as well as managing the group exercises.

Step 6: Evaluation

The pre- and post-tests should have an individual identifier so that the scores can be directly compared. The program coordinator should calculate the change in the percentage of correct answers from the pre- to the post-test for *each person* and then take the average to examine overall change in knowledge. To isolate specific areas of weakness in instruction, the coordinator should identify any question where a significant number of learners got the *specific question* incorrect on *both* the pre- and post-test. A course evaluation should also be conducted at each session.

In Connecticut, a "trainer roundtable" was held as a part of the evaluation process after trainers had had an opportunity to deliver the trainings. The program coordinator shared overall test and evaluation results. Trainers shared best practices and lessons learned. Future groups can decide if any program adjustments need to be made to improve learners' test scores and/or satisfaction with the program.

Credits

This toolkit was developed by the Connecticut Partnership for Public Health Workforce Development (Connecticut Partnership) and the Yale University School of Public Health. It was adapted for distribution by the Yale Center for Public Health Preparedness. This project was funded by the:

- Connecticut Department of Public Health
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- Centers for Disease Control and Prevention Center Public Health Preparedness Cooperative Agreement
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