Principles of Epidemiology in Public Health Practice

Third Edition

An Introduction to Applied Epidemiology and Biostatistics
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Glossary
ACKNOWLEDGMENTS

Developed by
U.S. Department of Health and Human Services
Centers for Disease Control and Prevention (CDC)
Office of Workforce and Career Development (OWCD)
Career Development Division (CDD)
Atlanta, Georgia 30333

Technical Content
Richard Dicker, MD, MSc., Lead Author, CDC/OWCD/CDD (retired)
Fátima Coronado, MD, MPH, CDC/OWCD/CDD
Denise Koo, MD, MPH, CDC/OWCD/CDD
Roy Gibson Parrish, II, MD (contractor)

Development Team
Sonya Arundar, MS, CDC (contractor)
Cassie Edwards, CDC (contractor)
Nancy Hunt, MPH, CDC (contractor)
Ron Teske, MS, CDC (contractor)
Susan Baker Toal, MPH, Public Health Consultant (contractor)
Susan D. Welch, M.Ed., Georgia Poison Center

Planning Committee
Chris Allen, RPh, MPH, CDC
Walter Daley, DVM, MPH, CDC
Pat Drehobl, RN, MPH, CDC
Sharon Hall, RN, PhD, CDC
Dennis Jarvis, MPH, CHES, CDC
Denise Koo, MD, MPH, CDC

Graphics/Illustrations
Sonya Arundar, MS, CDC (contractor)
Lee Oakley, CDC (retired)
Jim Walters, CDC (contractor)

Technical Reviewers
Tomas Aragon, MD, DrPH, UC Berkeley Center for Infectious Disease Preparedness
Diane Bennett, MD, MPH, CDC
Danae Bixler, MD, MPH, West Virginia Bureau for Public Health
R. Elliot Churchill, MS, MA, CDC (retired)
Roxanne Ereth, Arizona Department of Health Services
Stephen Everett, MPH, Yavapai County Community Health Services, Arizona
Michael Fraser, PhD., National Association of County and City Health Officials
Nancy Gathany, M. Ed., CDC
Marjorie A. Getz, MPHIL, Bradley University, Illinois
John Mosely Hayes, DrPH, MBA, MSPH, Tribal Epidemiology Center United South and
Eastern Tribes, Inc., Tennessee
Richard Hopkins, MD, MSPH, Florida Department of Health
John M. Horan, MD, MPH, Georgia Division of Public Health
Christy Bruton Kwon, MSPH, SAIC
Edmond F. Maes, PhD, CDC
Sharon McDonnell, MD, MPH, Darmouth Medical School
William S. Paul, MD, MPH, Chicago Department of Public Health
James Ransom, MPH, National Association of County and City Health Officials
Lynn Steele, MS, CDC
Donna Stroup, PhD., MSc., American Cancer Society
Douglas A. Thoroughman, PhD, CDC
Kirsten Weiser, MD, Darmouth Hitchcock Medical School
Celia Woodfill, PhD, California Department of Health Services

Field Test Participants

Sean Altekruse, DVM, MPH, PhD, United States Department of Agriculture
Gwen Barnett, MPH, CHES, CDC
Jason Bell, MD, MPH
Lisa Benaise, MD, CDC
Amy Binggeli, DrPH, RD, CHES, CLE, Imperial County Public Health Department, California
Kim M. Blindauer, DVM, MPH, ATSDR
Randy Bong, RN, Federal Bureau of Prisons
Johnna Burton, BS, CHES, Tennessee Department of Health
Catherine C. Chow, MD, MPH, CDC
Janet Cliatt, MT., CLS (NCA), National Institutes of Health
Catherine Dentinger, FNP, MS, NYC Department of Health and Mental Hygiene
Veronica Gordon, RN, BSN, MS, Indian Health Service, New Mexico
Sue Gorman, Pharm. D., CDC
Deborah Gould, PhD., CDC
Juliana Grant, MD, CDC
Lori Evans Hall, Pharm. D., CDC
Nazmul Hassan, MS, Food and Drug Administration
Daniel L. Holcomb, ATSDR
Asim A. Jani, MD, MPH FACAP, CDC
Jean Jones, RN, CDC
Charletta Lewis, BSN, Wellpinit Indian Health Service, Washington
Sheila F. Mahoney, CNM., MPH, National Institutes of Health
Cassandra Martin, MPH, CHES, Georgia Department of Human Resources
Joan Marie McFarland, RN, PHN, Winslow Indian Health Care Center, Arizona
Rosemarie McIntyre, RN, MS, CHES, CDC
Gayle L. Miller, DVM, PhD(c), Jefferson County Department of Health and Environment, Missouri
Long S. Nguyen, MPH, CHES, CDC (contractor)
Paras M. Patel, R.Ph., Food and Drug Administration
Rossanne M. Philen, MD, MS, CDC
Alyson Richmond, MPH, CHES, CDC (contractor)
Glenna A. Schindler, MPH, RN, CHES, Missouri
Sandra Schumacher, MD, MPH, CDC
Julie R. Sinclair, DVM, MPH, CDC
Nita Sood, R.Ph., Pharm.D., Health Resources and Services Administration
P. Lynne Stockton, VMD, MS, CDC
Jill B. Surrency, MPH, CHES, CDC (contractor)
Joyce K. Witt, RN, CDC
INTRODUCTION

This course was developed by the Centers for Disease Control and Prevention (CDC) as a self-study course. Continuing education credits are offered for certified public health educators, nurses, physicians, pharmacists, veterinarians, and public health professionals. CE credit is available only through the CDC/ATSDR Training and Continuing Education Online system at www.cdc.gov/phtnonline.

To receive CE credit, you must register for the course (SS1000) and complete the evaluation and examination online. You must achieve a score of 70% or higher to pass the examination. If you do not pass the first time, you can take the exam a second time.

For more information about continuing education, call 1-800-41TRAIN (1-800-418-7246) or by e-mail at ce@cdc.gov.

Course Design

This course covers basic epidemiology principles, concepts, and procedures useful in the surveillance and investigation of health-related states or events. It is designed for federal, state, and local government health professionals and private sector health professionals who are responsible for disease surveillance or investigation. A basic understanding of the practices of public health and biostatistics is recommended.

Course Materials

The course materials consist of six lessons. Each lesson presents instructional text interspersed with relevant exercises that apply and test knowledge and skills gained.

**Lesson One: Introduction to Epidemiology**

*Key features and applications of descriptive and analytic epidemiology*

**Lesson Two: Summarizing Data**

*Calculation and interpretation of mean, median, mode, ranges, variance, standard deviation, and confidence interval*

**Lesson Three: Measures of Risk**

*Calculation and interpretation of ratios, proportions, incidence rates, mortality rates, prevalence, and years of potential life lost*

**Lesson Four: Displaying Public Health Data**

*Preparation and application of tables, graphs, and charts such as arithmetic-scale line, histograms, pie chart, and box plot*

**Lesson Five: Public Health Surveillance**

*Processes, uses, and evaluation of public health surveillance in the United States*
Lesson Six: Investigating an Outbreak

Steps of an outbreak investigation

A Glossary that defines the major terms used in the course is also provided at the end of Lesson Six.

Supplementary Materials

In addition to the course materials, students may want to use the following:
- A calculator with square root and logarithmic functions for some of the exercises.

Objectives

Students who successfully complete this course should be able to correctly:
- Describe key features and applications of descriptive and analytic epidemiology.
- Calculate and interpret ratios, proportions, incidence rates, mortality rates, prevalence, and years of potential life lost.
- Calculate and interpret mean, median, mode, ranges, variance, standard deviation, and confidence interval.
- Prepare and apply tables, graphs, and charts such as arithmetic-scale line, scatter diagram, pie chart, and box plot.
- Describe the processes, uses, and evaluation of public health surveillance.
- Describe the steps of an outbreak investigation.

General Instructions

Self-study courses are “self-paced.” We recommend that a lesson be completed within two weeks. To get the most out of this course, establish a regular time and method of study. Research has shown that these factors greatly influence learning ability. Each lesson in the course consists of reading, exercises, and a self-assessment quiz.

Reading Assignments

Complete the assigned reading before attempting to answer the self-assessment questions. Read thoroughly and re-read for understanding as necessary. A casual reading may result in missing useful information which supports main themes. Assignments are designed to cover one or two major subject areas. However, as you progress, it is often necessary to combine previous learning to accomplish new skills. A review of previous lessons may be necessary. Frequent visits to the Glossary may also be useful.

Exercises

Exercises are included within each lesson to help you apply the lesson content. Some exercises may be more applicable to your workplace and background than others. You should review the answers to all exercises since the answers are very detailed. Answers to
the exercises can be found at the end of each lesson. Your answers to these exercises are valuable study guides for the final examination.

Self-Assessment Quizzes
After completing the reading assignment, answer the self-assessment quizzes before continuing to the next lesson. Answers to the quizzes can be found at the end of the lesson. After passing all six lesson quizzes, you should be prepared for the final examination.

- Self-assessment quizzes are open book
- Unless otherwise noted, choose ALL CORRECT answers.
- Do not guess at the answer
- You should score at least 70% correct before continuing to the next lesson.

Tips for Answering Questions
- Carefully read the question.
  Note that it may ask, “Which is CORRECT?” as well as “Which is NOT CORRECT?” or “Which is the EXCEPTION?”
- Read all the choices given.
  One choice may be a correct statement, but another choice may be more nearly correct or complete for the question that is asked.

Final Examination and Course Evaluation
The final examination and course evaluation are available only on-line. The final requirement for the course is an open-book examination. We recommend that you thoroughly review the questions included with each lesson before completing the exam.

It is our sincere hope that you will find this undertaking to be a profitable and satisfying experience. We solicit your constructive criticism at all times and ask that you let us know whenever you have problems or need assistance.