

Essential Readings in Infectious Disease Epidemiology

Manya Magnus, PhD, MPH

The George Washington University
School of Public Health and Health Services
Department of Epidemiology and Biostatistics
Washington, DC



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About the Author

Manya Magnus, PhD, MPH, is an Associate Professor in the Department of Epidemiology and Biostatistics, with a secondary appointment as Associate Professor in the Department of Health Policy, at The George Washington University School of Public Health and Health Services. Dr. Magnus is co-director of the School's MPH Epidemiology Program and co-director of the Graduate Certificate in HIV/AIDS Studies. Dr. Magnus received her BA from the University of California, San Diego and her MPH and PhD from Tulane University. Always interested in integrating research with clinical care, Dr. Magnus has collaborated on a variety of epidemiologic studies, including randomized-controlled clinical trials and observational and evaluation studies. She now applies epidemiologic methodology to evaluate national programs in local- and state-level studies, including CDC-sponsored behavioral surveillance, and Special Projects of National Significance funded by the HIV/AIDS Bureau of the Health Services Resources Administration. Dr. Magnus also participates in a variety of other HIV- and STD-related research activities. The primary focus of her research is HIV/AIDS among women, children, adolescents, and other vulnerable populations and includes clinical trials, observational studies, and innovative approaches to evaluation research.

Contents

Series Page		xi
Introduction		xiii
How to Use This Book		xv
Section I	Historical Moments	1
Part I	Public Health, Passion, Persistence	3
Part II	Science and Letters	13
	Reading 1: De Foe and <i>A Journal of the Plague Year</i>	15
Part III	What About the Flu?	21
	Reading 2: 1918 Influenza: The Mother of All Pandemics	22
	Reading 3: Public Health Weekly Report for August 15, 1919— The Epidemiology of Influenza	31
	Reading 4: Update: Influenza Activity—United States, September 30, 2007–April 5, 2008, and Composition of the 2008–09 Influenza Vaccine	35
Part IV	Public Health Progress	43
	Reading 5: Achievements in Public Health, 1900–1999: Changes in the Public Health System	44

Part V	Ethics	49
	Reading 6: The Belmont Report	50
	Reading 7: U.S. Public Health Service Syphilis Study at Tuskegee	58
	Reading 8: Failure to Gain Coal-Face Commitment and to Use the Uncertainty Principle	60
Section II	Descriptive Epidemiology: Outbreak Investigations	65
Part VI	Descriptive Epidemiology and Outbreak Investigations	67
	Reading 9: Outbreak Investigations—A Perspective	68
	Reading 10: Framework for Evaluating Public Health Surveillance Systems for Early Detection of Outbreaks: Recommendations from the CDC Working Group	74
Part VII	Investigating HIV/AIDS	87
	Reading 11: <i>Pneumocystis</i> Pneumonia—Los Angeles	88
	Reading 12: Kaposi's Sarcoma and <i>Pneumocystis</i> Pneumonia Among Homosexual Men—New York City and California	90
	Reading 13: Follow-Up on Kaposi's Sarcoma and <i>Pneumocystis</i> Pneumonia	92
	Reading 14: A Cluster of Kaposi's Sarcoma and <i>Pneumocystis carinii</i> Pneumonia Among Homosexual Male Residents of Los Angeles and Range Counties, California	94
Part VIII	Readily Transmissible and Emerging Infections: Identification, Surveillance, and Control	97
	Reading 15: Outbreak of Severe Acute Respiratory Syndrome—Worldwide, 2003	98
	Reading 16: Preliminary Clinical Description of Severe Acute Respiratory Syndrome	100
	Reading 17: Updated Interim Surveillance Case Definition for Severe Acute Respiratory Syndrome (SARS)—United States, April 29, 2003	101
	Reading 18: Revised U.S. Surveillance Case Definition for Severe Acute Respiratory Syndrome (SARS) and Update on SARS Cases— United States and Worldwide, December 2003	104
	Reading 19: SARS Surveillance Project—Internet-Enabled Multiregion Surveillance for Rapidly Emerging Disease	108
	Reading 20: Excerpt from: Postexposure Prophylaxis, Isolation, and Quarantine to Control an Import-Associated Measles Outbreak— Iowa, 2004	114
	Reading 21: Extensively Drug-Resistant Tuberculosis—United States, 1993–2006	116

	Reading 22: Methicillin-Resistant– <i>Staphylococcus aureus</i> Hospitalizations, United States	122
	Reading 23: Severe Methicillin-Resistant <i>Staphylococcus aureus</i> Community-Acquired Pneumonia Associated with Influenza—Louisiana and Georgia, December 2006–January 2007	127
Part IX	Foodborne Diseases	133
	Reading 24: Food-Related Illness and Death in the United States	134
	Reading 25: Food-Related Illness and Death in the United States: Letters	153
	Reading 26: CDC Case Study, Oswego—An Outbreak of Gastrointestinal Illness Following a Church Supper	157
	Reading 27: Compendium of Acute Foodborne and Waterborne Diseases	163
Section III	Analytic Methods	169
Part X	Analytic Methods	171
	Reading 28: Strengthening the Reporting of Observational Studies in Epidemiology (STROBE): Explanation and Elaboration	172
Part XI	Intention-to-Treat: Tough Idea Made Simple	207
	Reading 29: Intention-to-Treat Principle	208
Part XII	Assessing Misclassification: Surveillance Meets Methods	213
	Reading 30: Misclassification of the Stages of Syphilis: Implications for Surveillance	214
	Reading 31: Interim Within-Season Estimate of the Effectiveness of Trivalent Inactivated Influenza Vaccine—Marshfield, Wisconsin, 2007–08 Influenza Season	221
Part XIII	Understanding Results	227
	Reading 32: STD Treatment to Prevent HIV Infection: Implications of Recent Community-Level Studies	229
Part XIV	Different Approaches to Examining Bias in Infectious Disease Epidemiology	233
	Reading 33: Excerpt From: Impact of Severity of Illness Bias and Control Group Misclassification Bias in Case–Control Studies of Antimicrobial-Resistant Organisms	234
	Reading 34: Excerpt From: An Outbreak of Multidrug-Resistant <i>Pseudomonas Aeruginosa</i> Associated with Increased Risk of Patient Death in an Intensive Care Unit	235

Part XV	Challenges in Studying Behavior	237
	Reading 35: Measuring Sexual Behavior: Methodological Challenges in Survey Research	238
	Reading 36: HIV Prevalence, Unrecognized Infection, and HIV Testing Among Men Who Have Sex with Men— Five U.S. Cities, June 2004–April 2005	247
Part XVI	Using Computers to Improve Validity of Data Collection while Studying Behavior	253
	Reading 37: A Comparison Between Audio Computer-Assisted Self-Interviews and Clinician Interviews for Obtaining the Sexual History	254
	Reading 38: Randomized Controlled Trial of Audio Computer- Assisted Self-Interviewing: Utility and Acceptability in Longitudinal Studies	255
	Reading 39: Application of Computer-Assisted Interviews to Sexual Behavior Research	256
 Exercises		
	Exercise 1: Creating an HIV Prevention Program	260
	Exercise 2: Logic Model Development	261
	Exercise 3: Identifying Study Designs	263
	Exercise 4: Getting Started with Critical Evaluation of the Literature	271
	Exercise 5: Name That Study Design	272
	Exercise 6: Evaluating a Public Health Surveillance Program	273

Series Page

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ABOUT THE EDITOR:

Richard Riegelman, MD, MPH, PhD, is professor of Epidemiology-Biostatistics, Medicine, and Health Policy and founding dean at The George Washington University School of Public Health and Health Services in Washington, DC.

Introduction

We are born knowing how to perceive; we are not born knowing how to read, interpret, or critically evaluate. Nevertheless, these skills—together with our perception—enable us to move beyond the superficial gleaning of information that is ordinarily done in one's day-to-day life. The difference between reading the newspaper or a relaxing novel and science is the ability to critically evaluate research. This skill informs the development of studies, their implementation, analysis, interpretation, and dissemination. As public health practitioners, you also need to be able to participate in the scientific community, in the science, through an understanding of what research has been conducted in the past. This will enable you to do everything from your own projects—even just a literature review—to understanding and sharing their public health implications. In order to do this, you must be able to understand not only the findings of a given study or report but also understand the methods undertaken to gather the data on which the findings and interpretations are based. This is a skill distinct from just reading, and one that takes practice, much as learning a foreign language.

This is an active text, one designed to engage you in the thinking process as you hone your critical evaluation skills. There aren't any answers; there is only the process of thinking and of thinking deeper. The format of this text is to provide you with focused readings, guiding questions, and exercises based upon the readings; the thinking process you go through ? though for each will give you practice in critical evaluation. The articles in this reader are not all "landmark" articles in infectious disease epidemiology (though some are). Criteria for inclusion in this reader were simple: Each article or exercise was selected to provide you with at least one skill in critical evaluation of the literature. Think of this text as training wheels—articles and pieces of scientific writing in infectious disease epidemiology paired with exercises to get you thinking. Soon you will begin to ask your own questions when reading other articles and resources. All of the facets explored in this reader should enhance your epidemiologic toolkit and allow you to be a better epidemiologist as well as a better reader of the scientific literature.

For those of you using this reader in conjunction with the *Essentials of Infectious Disease Epidemiology* textbook, you will find articles referenced in the text provided here in expanded form. This book should echo and deepen understanding from that more introductory book. For those of you using this reader in conjunction with other epidemiologic textbooks or on its own, you will find that it is self-sufficient in its ability to convey central concepts and exercises and will likely parallel the concepts presented in other epidemiologic educational resources.

How to Use This Book

This reader is designed to be used by individuals but is also a wonderful study guide for pairs or groups; think of the exercises as conversation starters to get your group going. Whether you opt to address the exercises by yourself, in pairs, or in groups, do not stop when you reach the end of the questions: Delve deeper into each article or resource so that you can become an expert in each and every one of these chapters. Like a good book or movie, you will see that each article may be read many times over. At different points in your career—now, 5 years from now, 20 years from now—you will see different things in the methods of each article or resource. The ease with which you will be able to find methodologic flaws, errors, strengths, limitations, and more in each study will grow with the passing years—again, like learning a language. At first it will be harder, but it will become easier, in some ways, with practice. At the same time, you may find that the more subtle aspects—those that you come to with time—are that much harder to reckon with. Thus, the challenges will continue, never cease, as you hone your critical evaluation skills.

Enjoy as you embark on these exciting exercises!

~Manya Magnus, PhD, MPH

