Contents

Contributors, x
Foreword to the Second Edition, xix
Stephen B. Thacker & Denis M. Coulombier
Foreword to the First Edition, xxi
Anne Schuchat & Jean-Claude Desenclos
Preface to Second Edition, xxiii
Nkuchia M. M’ikanatha, Ruth Lynfield, Chris A. Van Beneden, & Henriette de Valk
Preface to First Edition, xxv
Nkuchia M. M’ikanatha, Ruth Lynfield, Chris Van Beneden, & Henriette de Valk
Acknowledgments, xxvii
Weighing of the Heart, xxviii
Polyxeni Potter

Section 1: Introduction to Infectious Disease Surveillance

1 Infectious Disease Surveillance: A Cornerstone for Prevention and Control, 3
Nkuchia M. M’ikanatha, Ruth Lynfield, Kathleen G. Julian, Chris A. Van Beneden, & Henriette de Valk

2 Origins and Progress in Surveillance Systems, 21
Stephen B. Thacker & Donna F. Stroup

3 Use of Surveillance in Disease Eradication Efforts, 32
Part 1: Introduction to the Concept and Use of Surveillance in the Eradication of Smallpox, 32
D.A. Henderson
Part 2: Lessons Learned in Guinea Worm Disease (Dracunculiasis) Eradication, 41
Samuel Makoy, Steven R. Becknell, Alexander H. Jones, Gabriel Waat, Ernesto Ruiz-tiben, & Donald R. Hopkins
Part 3: Surveillance for Measles Eradication in Countries with Limited Resources, 54
Mark Grabowsky, Mac Otten, & Balcha Masresha
CONTENTS

4 Infectious Disease Surveillance and the International Health Regulations, 62
   Bruce J. Plotkin & Maxwell C. Hardiman

5 Supranational Surveillance in the European Union, 81
   Andrea Ammon & Edward van Straten

Section 2: Program Area Surveillance Systems

6 Active, Population-based Surveillance for Infectious Diseases, 95
   Chris A. Van Beneden, Melissa Arvay, Somsak Thamthitiwat, & Ruth Lynfield

7 Surveillance for Foodborne Diseases, 109
   Part 1: Approaches to Surveillance for Foodborne Diseases, 109
      Elaine Scallan, Barbara Mahon, & Danilo Lo Fo Wong
   Part 2: Investigation of Foodborne Disease Outbreaks, 120
      Stephanie D. Meyer, Kirk E. Smith, & Craig Hedberg
   Part 3: Surveillance for Antimicrobial Resistance Among Foodborne
      Bacteria—the US Approach, 129
      Jean M. Whichard, Kathryn Gay, Heather Tate, & Tom M. Chiller

8 Surveillance for Zoonotic Diseases, 143
   Mira J. Leslie & James J. Kazmierczak

9 Surveillance for Vector-borne Diseases, 157
   Lyle R. Petersen & James L. Hadler

10 Surveillance for Vaccine-preventable Diseases, 174
    Hanna M. Nohynek & Elizabeth Miller

11 Public Health Surveillance for Vaccine Adverse Events, 187
    John K. Iskander & Yenlik Zheteyeva

12 Seasonal and Pandemic Influenza Surveillance, 200
    Lynnette Brammer, Alicia P. Budd, & Lyn Finelli

13 Surveillance for Agents of Bioterrorism in the USA, 211
    Richard N. Danila & Aaron T. Fleischauer

14 Surveillance for Unexplained Infectious Disease-related Deaths, 223
    Ruth Lynfield, Kurt B. Nolte, Ann M. Schmitz, & Marc Fischer

15 Surveillance for Tuberculosis, 234
    Delphine Antoine & Ibrahim Abuhakar

16 Surveillance for Healthcare-associated Infections, 248
    Petra Gastmeier, Bruno Coignard, & Teresa C. Horan

17 Biovigilance: Designing and Implementing Surveillance Systems for the
    Safety and Quality of Blood, Organs, and Tissues, 261
    Matthew J. Kuehnert, Robert P. Wise, & Jerry A. Holmberg
CONTENTS

18 Surveillance for Antimicrobial Resistance and Trends in Antimicrobial Utilization, 274
   Katherine Fleming-Dutra, Lauri A. Hicks, & Hajo Grundmann

19 Surveillance for Viral Hepatitis in Europe, 288
   Mary E. Ramsay, Koye Balogun, Catherine Quigley, & Chee Fu Yung

20 Surveillance for Human Immunodeficiency Virus Infection in the USA, 304

21 Surveillance for Human Immunodeficiency Virus/Acquired Immunodeficiency Syndrome for Countries in Transition, 317
   Part 1: Surveillance for Human Immunodeficiency Virus/Acquired Immunodeficiency Syndrome in India, 317
      Rubina Imtiaz, Renu Garg, & Madhulekha Bhattacharya
   Part 2: Surveillance for Human Immunodeficiency Virus/Acquired Immunodeficiency Syndrome in Russia, 327
      Dmitry M. Kissin, Charles R. Vitek, Evgeny Voronin, & Susan D. Hillis
   Part 3: Surveillance for Human Immunodeficiency Virus/Acquired Immunodeficiency Syndrome in South Africa, 334
      Thomas M. Rehle & Gita Ramjee

22 Surveillance for Sexually Transmitted Diseases, 343
   Samuel L. Groseclose, Michael C. Samuel, Joan M. Chow, & Hillard Weinstock

23 Communicable Disease Surveillance During Complex Emergencies, 361
   Marta Valenciano, Francisco J. Luquero, & Alain Moren

24 Infectious Disease Surveillance in Globally Mobile Populations, 376
   Katrin S. Kohl & Alfonso Rodriguez-Lainz

25 Surveillance for Infectious Diseases in Mass Gatherings, 388
   Andrea M. Forde

Section 3: Internet- and Wireless-based Information Systems in Infectious Disease Surveillance

26 Use of the Web to Enhance Infectious Disease Surveillance, 403
   Nkuchia M. M’ikanatha, Dale D. Rohn, Toby McAdams, David P. Welliver, & Kathleen G. Julian

27 Web-based Sentinel Provider Surveillance Network in France, 418
   Thierry Blanchon

28 Electronic Surveillance for Infectious Diseases in Germany, 426
   Gérard Krause

29 Electronic Clinical Laboratory Reporting for Public Health Surveillance, 434
   Perry F. Smith, Guthrie S. Birkhead, & J.A. Magnuson
CONTENTS

30 Mobile Technology for Infectious Disease Surveillance, 447
Herman D. Tolentino, John S. Brownstein, Barbara L. Massoudi, & Mehran S. Massoudi

31 The Global Public Health Intelligence Network, 457
Abla Mawudeku, Michael Blench, Louise Boily, Ron St. John, Roberta Andraghetti, & Martha Ruben

32 Syndromic Surveillance for Infectious Diseases, 470
Julie A. Pavlin

Section 4: Molecular Methods, Data Analyses, and Evaluation of Surveillance Systems

33 Use of Molecular Epidemiology in Infectious Disease Surveillance, 485
John M. Besser

34 Software Applications, Resources, and Introduction to Statistical Analysis, 502
Part 1: Examples of Software Application and Web-based Resources for Infectious Disease Surveillance, 502
John H. Holmes, Michael C. Samuel, Gilles Desv´e, & Joseph M. Hilbe
Part 2: Analysis and Interpretation of Reportable Infectious Disease Data, 508
Mindy J. Perilla & Elizabeth R. Zell

35 Analysis and Interpretation of Case-based Infectious Disease Surveillance Data: Human Immunodeficiency Virus-related Morbidity and Mortality Surveillance in the USA, 522
Lisa M. Lee & George W. Rutherford

36 Statistical Modeling of Infectious Disease Surveillance Data, 535
Leonhard Held & Michaela Paul

37 Geospatial Technologies and Spatial Data Analysis, 545
Part 1: Geographic Information System Approaches to Data Analysis, 545
Chester G. Moore & Jerome E. Freier
Part 2: Use of Geographic Information Systems and Spatial Analysis in Infectious Disease Surveillance in North America and East Africa, 558
Sunny Mak & Rebecca J. Eisen

38 Evaluation of Syndromic Surveillance Systems that Use Healthcare Data, 565
Samuel L. Groseclose, David L. Buckeridge, & James W. Buehler

Section 5: Basic Considerations, Communications, and Training in Infectious Disease Surveillance

39 Legal Basis for Infectious Disease Surveillance and Control in the USA, 583
Richard E. Hoffman & Frederic E. Shaw
CONTENTS

40 Ethics and Public Health Surveillance, 596
   Amy L. Fairchild & David M. Johns

41 Communication in Infectious Disease Surveillance, 607
   Part 1: Communication, Mass Media Relations, and Infectious Disease
      Surveillance, 607
      Brian G. Southwell, Barbara J. Reynolds, & Kate Fowlie
   Part 2: Health Communication Case Study, 618
      Jeffrey D. Klausner & Katherine Ahrens

42 Training in Infectious Disease Surveillance: Contributions of the Epidemic
   Intelligence Service and European Field Epidemiology Training Programs, 623
   Denise Koo, Douglas H. Hamilton, & Arnold Bosman

43 Surveillance Training for Fogarty International Fellows from Eastern
   Europe and Central Asia: the New York State Experience, 636
   Dale L. Morse, Robert A. Bednarczyk, & Louise-Anne McNutt

Section 6: Partnerships, Policy, and Preparedness

44 Public–Private Partnerships in Infectious Disease Surveillance, 649
   Andrew Friede

45 2009 Pandemic Influenza A (H1N1) Surveillance in the USA, 657
   Michael A. Jhung, Lynnette Brammer, & Lyn Finelli

46 Future Directions in Infectious Disease Surveillance, 668
   Ruth Lynfield, Nkuchia M. M’ikanatha, Chris A. Van Beneden, &
   Henriette de Valk

Index 671