Preface

This book is intended to provide a text on statistical methods for detecting clusters and/or clustering of health events that is of interest to final-year undergraduate- and graduate-level statistics, biostatistics, epidemiology, and geography students but will also be of relevance to public health practitioners, statisticians, biostatisticians, epidemiologists, medical geographers, human geographers, environmental scientists, and ecologists. Prerequisites are introductory biostatistics and epidemiology courses.

With increasing public health concerns about environmental risks, the need for sophisticated methods for analyzing spatial health events is immediate. Furthermore, the research area of statistical tests for disease clustering now attracts a wide audience due to the perceived need to implement wide-ranging monitoring systems to detect possible health-related bioterrorism activity. With this background and the development of the geographical information system (GIS), the analysis of disease clustering of health events has seen considerable development over the last decade. Therefore, several excellent books on spatial epidemiology and statistics have recently been published. However, it seems to me that there is no other book solely focusing on statistical methods for disease clustering. I hope that readers will find this book useful and interesting as an introduction to the subject.

Although the view of statistical methods of disease clustering embodied in this book is, of course, my own, it has been formed over many years through collaboration and contact with many statisticians. Especially, I must acknowledge the tremendous debt I owe to Martin Kulldorff, who has always provided me with invaluable insight and suggestions for improving my original ideas. I also thank Kunihiro Takahashi for preparing several figures and carefully reading the final text. My thanks also go to John Kimmel of Springer for inviting me to write this book and providing continual support and encouragement. Finally, I would like to thank Taeko Becque for checking my poor English.

Tokyo

Toshiro Tango

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