

Contents

1. Disease Frequency	1
Cross-Sectional Measures	2
Measures that Incorporate Fixed Intervals of Time	4
Measures for Variable Observation Times	7
Duration of Disease	10
	15
2. Comparisons	
Difference Measures	16
Ratio Measures	20
Mathematical Models of Incidence	22
Comparisons and Individual Cause	24
	27
3. Study Types	
Surveys	28
Closed Cohort Studies	30
Open Cohort Studies	35
Case-Control Studies	38
Directionality	43
	45
4. Time	
Time Characterizes Exposure and Exposure Effects	47
Historical Intensity of Exposure	53
Changes in Cohort Composition	54
Susceptibility	55
Concomitant Determinants of Risk or Diagnosis	56
Diagnostic Suspicion	57
Time that is Event-Free by Definition	59
	63
5. Cohort Studies	
Closed Cohort Studies	64
Open Cohort Studies	67

6. Case-Control Studies	73
Case-Control Studies and the Cohorts that Underlie Them 74	
Sampling the Source Population 75	
Pseudo-Sampling When the Source Population is not Identified 79	
Clinical Aspects of Case Definition 80	
Alternatives to Simple Causal Interpretation 82	
7. Generalization	87
Parameters 88	
Statistical Uncertainty 91	
Confounding 95	
Uncertainty Missed by Statistical Models 96	
8. Estimation	99
Analysis of Closed Cohort Studies 100	
Analysis of Open Cohort Studies 106	
Case-Control Studies 113	
9. Confounding	119
The Apparent Relative Risk 120	
Special Cases and Limits for Apparent RR(E) 122	
Determinants of the Apparent RR(E) 124	
Implications 127	
10. Reporting Results	129
Context 130	
Study Subjects and the Source Population 130	
Data Collection 131	
Results 132	
Implications 135	
11. Risk Perception and Communication	137
Economic Reason and the Quantification of Risk 138	
The Attribution of Risk 138	
The Perception of Risk 141	
Implications for Communication 143	

12. Questions for Review	145
Disease Frequency 146	
Comparisons 146	
Study Types 147	
Time 148	
Cohort Studies 148	
Case-Control Studies 149	
13. Statistical Terms and Concepts	151
Definitions 152	
Manipulating Variances 156	
14. Glossary of Epidemiologic Terms	159
Acknowledgements	165
Index	167