

## TABLE OF CONTENTS

FOREWORD. . . . .	III
PREFACE . . . . .	VII
CHAPTER	
1 BACKGROUND AND BASIC CONCEPTS. . . . .	1
1.1 The Magnitude of the Problem. . . . .	1
1.2 The Infected Person . . . . .	8
1.3 Control Procedures . . . . .	10
1.4 Modeling Transmission Dynamics. . . . .	13
1.5 The Contact Number and the Infectee Number. . . . .	16
2 A SIMPLE MODEL FOR GONORRHEA DYNAMICS. . . . .	18
2.1 One Population Model for Gonorrhoea. . . . .	19
2.2 Changes in Incidence: A Moving Equilibrium . . . . .	21
2.3 Changes in Incidence: Rapid Response . . . . .	23
3 A REFINED MODEL FOR GONORRHEA DYNAMICS . . . . .	25
3.1 A Gonorrhoea Model with n Groups . . . . .	25
3.2 Proportionate Mixing Among Groups . . . . .	29
4 MODELING GONORRHEA IN A POPULATION WITH A CORE GROUP . . . . .	32
4.1 The Concept of a Core Group . . . . .	33
4.2 The Core-Noncore Model. . . . .	37
4.3 Screening and Rescreening Strategies. . . . .	39
4.4 Contact Investigation Strategies. . . . .	42
4.5 Vaccination Strategies. . . . .	45
5 MODELING GONORRHEA TRANSMISSION IN A HETEROSEXUAL POPULATION . . . . .	49
5.1 The Female-Male Model . . . . .	52
5.2 Parameter Estimation and Sensitivity Analysis . . . . .	54
5.3 Screening Women and Men . . . . .	57
5.4 Seasonal Oscillations in Gonorrhoea Incidence. . . . .	59
6 MODELING GONORRHEA IN A POPULATION DIVIDED INTO EIGHT GROUPS . . . . .	69
6.1 The Model for a Heterogeneous Population. . . . .	70
6.2 The Contact Matrix. . . . .	73
6.3 Six Control Methods . . . . .	75
6.4 Parameter Estimation. . . . .	78
6.5 The Computer Programs . . . . .	81
6.6 Comparison of the Supplementary Control Procedures . . . . .	82
6.7 Discussion. . . . .	85
APPENDIX 1. . . . .	88
APPENDIX 2. . . . .	97
REFERENCES. . . . .	101