

# TABLE OF CONTENTS

<b>MDR Gram-Negative Infections I</b> .....	1
MDR Gram-Negative Infections I Panel .....	3

## ***Pseudomonas aeruginosa***

*By Thomas P. Lodise, Jr., Pharm.D., Ph.D.; and Monique R. Bidell, Pharm.D., BCPS*

Introduction .....	7
Microbial Characteristics .....	7
Antimicrobial Resistance Mechanisms .....	9
Clinical Presentation and Risk Factors .....	13
Antibiotic Treatment of Patients with <i>P. aeruginosa</i> Infections .....	15
Role of Antimicrobial Stewardship and the Pharmacist .....	21
Conclusion .....	22
References .....	23
Self-Assessment Questions .....	25

## **Other Non-fermenters:**

### ***Acinetobacter and Stenotrophomonas***

*By Katie E. Barber, Pharm.D.; and Jessica K. Ortwine, Pharm.D., BCPS-AQ ID*

Acinetobacter .....	29
Clinical Disease States .....	30
Resistance .....	32
Treatment .....	33
Pipeline Agents .....	36
Stenotrophomonas .....	38
Epidemiology .....	38
Resistance .....	39
Conclusion .....	47
References .....	47
Self-Assessment Questions .....	56

<b>MDR Gram-Negative Infections II</b> .....	61
MDR Gram-Negative Infections II Panel .....	63

## **Optimizing Empiric Gram-Negative Therapy**

*By Eric R. Wenzler, Pharm.D., BCPS, BCIDP, AAHIVP*

Introduction .....	67
Tools to Optimize Empiric Antimicrobial Therapy .....	68

Conclusion .....	82
References .....	82
Self-Assessment Questions .....	85

## **PK/PD for Optimizing Therapy**

*By Nikolas J. Onufrak, Pharm.D.*

Introduction .....	89
Basic Principles .....	89
Translational Medicine .....	94
PK-PD Optimization of Agents Used for MDR Gram-Negative Infections .....	97
Conclusion .....	102
References .....	103
Self-Assessment Questions .....	109

<b>MDR Gram-Negative Infections III</b> .....	113
MDR Gram-Negative Infections III Panel .....	115

## **Antibiotic Resistance in Enterobacteriaceae**

*By Erin K. McCreary, Pharm.D., BCPS, BCIDP; and Ryan K. Shields, Pharm.D., MS*

Enterobacteriaceae and Antibiotic Resistance .....	119
Mechanistic Basis of Antibiotic Resistance in Enterobacteriaceae .....	121
Common Resistance Phenotypes Encountered Clinically that Are Mediated by $\beta$ -Lactamases .....	127
Conclusion .....	136
References .....	137
Self-Assessment Questions .....	145

## **Recorded Webcast: Piperacillin/Tazobactam vs. Carbapenems for ESBL-Producing Enterobacteriaceae**

*By Twisha S. Patel, Pharm.D., BCPS, BCIDP*

Recorded Webcast: Piperacillin/Tazobactam vs. Carbapenems for ESBL-Producing Enterobacteriaceae .....	152
Hyperlink to this activity .....	152
Self-Assessment Questions .....	154