

# TABLE OF CONTENTS

## Infectious Diseases in the ICU I..... 1

Infectious Diseases in the ICU I Panel.....	3
---------------------------------------------	---

### MDR Gram-negative Pathogens

*By Paul Juang, Pharm.D., FASHP, FCCM, BCPS, BCCCP*

Introduction.....	7
Enterobacteriaceae.....	10
<i>Pseudomonas aeruginosa</i> .....	14
<i>Acinetobacter baumannii</i> .....	15
<i>Stenotrophomonas maltophilia</i> .....	16
Novel Dosing Techniques.....	16
Conclusion.....	18
References.....	18
Self-Assessment Questions.....	23

### Resistant Gram-positive Pathogens

*By Christopher K. Carter, Pharm.D., FCCM, BCCCP;  
and Matthew P. Crotty, Pharm.D., BCIDP*

Introduction.....	27
Roadmap.....	27
Methicillin-Resistant <i>S. aureus</i> .....	28
Enterococci.....	36
<i>Streptococcus</i> spp.....	40
Conclusion.....	43
References.....	43
Self-Assessment Questions.....	51

## Infectious Diseases in the ICU II.....55

Infectious Diseases in the ICU II Panel.....	57
----------------------------------------------	----

### *Clostridioides difficile*

*By Joanne J. Smith, Pharm.D., BCCCP; and Christopher Miller,  
Pharm.D., BCCCP*

Introduction and Epidemiology of CDI.....	61
Pathogenesis.....	61
Risk Factors for Development of CDI.....	62
Diagnosis and Testing of CDI.....	64
Prevention of CDI.....	67
Treatment of CDI.....	68
Management of CDI in the ICU.....	73
Secondary Prevention of CDI.....	73
Conclusion.....	75
References.....	75
Self-Assessment Questions.....	79

## Fungal Infections

*By Michael T. Kenes, Pharm.D., FCCM, BCPS, BCCCP;  
and Nicholas Farina, Pharm.D., BCCCP*

Introduction.....	83
Epidemiology.....	83
Diagnosis of Fungal Infection.....	84
Invasive Candidiasis—Approach to Treatment.....	86
Treatment Strategies for Patients with Invasive Fungal Infection.....	87
Antifungal Pharmacotherapy.....	90
Pharmacokinetic Considerations.....	92
Conclusion.....	94
References.....	94
Self-Assessment Questions.....	97

## Infectious Diseases in the ICU III..... 101

Infectious Diseases in the ICU III Panel.....	103
-----------------------------------------------	-----

### Infective Endocarditis

*By Sajni Patel, Pharm.D., BCCP*

Introduction.....	107
Presentation.....	108
Antimicrobial Considerations.....	110
Transitioning to Outpatient Treatment.....	120
Management of Embolic Phenomena and Metastatic Foci of Infection.....	120
Conclusion.....	121
References.....	121
Self-Assessment Questions.....	125

### Febrile Neutropenia

*By Michael A. Rudoni, Pharm.D., BCPS, BCCCP*

Neutropenia and Febrile Neutropenia.....	129
Clinical Features and Diagnosis of FN.....	130
Risk of FN in Patients Undergoing Cytotoxic Chemotherapy.....	130
Role of Hematopoietic Growth Factors for Prevention and Treatment of FN.....	131
Prevention of Infection and FN.....	135
Treatment of FN.....	139
FN Management in the ICU.....	143
Conclusion.....	147
References.....	147
Self-Assessment Questions.....	151

## **Infectious Diseases in the ICU IV ..... 155**

Infectious Diseases in the ICU IV Panel ..... 157

## **Interactive Case: Therapeutic Drug Monitoring**

*By Gabrielle A. Gibson, Pharm.D., BCPS, BCCCP*

Interactive Case: Therapeutic Drug Monitoring ..... 161

Hyperlink to activity ..... 161

Self-Assessment Questions ..... 165

## **Interactive Case: Intra-abdominal Infections and Enterocutaneous Fistulas**

*By Michaelia Cucci, Pharm.D., BCPS, BCCCP*

Interactive Case: Intra-abdominal Infections and Enterocutaneous Fistulas ..... 169

Hyperlink to activity ..... 169

Self-Assessment Questions ..... 173

## **Interactive Case: Infections in Patients with Mechanical Circulatory Support Devices**

*By Zachary Smith, Pharm.D., BCPS, BCCCP; and Long To, Pharm.D., BCPS*

Interactive Case: Infections in Mechanical Circulatory Support Devices ..... 178

Hyperlink to activity ..... 178

Self-Assessment Questions ..... 183