Contents

Section One: Fundamentals of Theory

Chapter 1: Perioperative Education, 1

The Art and Science of Surgery, 2

Perioperative Learner, 2

Perioperative Educator, 5

Application of Theory to Practice, 11

Expected Behaviors of Perioperative Caregivers, 11

Realities of Clinical Practice, 13

Chapter 2: Foundations of Perioperative Patient Care Standards, 16

Surgical Conscience, 16

Patient Rights, 17

Accountability, 18

Standardization of Patient Care, 18

Recommended Practices, 21

Professionalism, 26

Professional Perioperative Nursing, 26

Evidence-Based Practice, 27

Nursing Process, 28

Standards of Perioperative Nursing Practice, 31

Clinical Competency of the Perioperative Nurse, 34

Scope of Perioperative Nursing Practice, 35

Surgical Technology, 35

Standards of Practice for Surgical Technologists, 35 Clinical Competency of the Surgical Technologist, 36

Continual Performance Evaluation and Improvement, 36

Chapter 3: Legal, Regulatory, and Ethical Issues, 38

Legal Issues, 38

Liability, 39

TJC and Sentinel Events, 42

Consent, 45

Documentation of Perioperative Patient Care, 47

Legal Aspects of Drugs and Medical Devices, 50

Ethical Issues, 51

Section Two: The Perioperative Patient Care Team, 56

Chapter 4: The Perioperative Patient Care Team and Professional Credentialing, 56

Dependence of the Patient on the Qualified Team, 56

Credentialing of Qualified Caregivers, 57

Perioperative Patient Care Team, 57

Chapter 5: The Surgical First Assistant, 64

First Assistant's Knowledge and Skill Level, 65

What Does the First Assistant Do? 66

Disciplines Associated with First-Assisting in Surgery, 74

Chapter 6: Administration of Perioperative Patient Care Services, 79

Establishing Administrative Roles, 79

Interdepartmental Relationships, 84

Patient Care Departments, 85

Patient Services Departments, 85

Departmental Service Divisions, 86

Coordination Through Committees, 88

Surgical Services Management, 91

Budgeting and Financial Responsibility, 95

New Product and Equipment Evaluation, 97

Section Three: The Patient as a Unique Individual, 99

Chapter 7: The Patient: The Reason for Your Existence, 99

The Patient as an Individual, 99

The Patient with Individualized Needs, 103

The Patient with Cancer, 109

The Patient with Chronic Comorbid Disease, 117

The Patient Who Is a Victim of Crime, 119

End-of-Life Care, 123

Death of a Patient in the Operating Room, 123

Chapter 8: Perioperative Pediatrics, 125

Indications for Surgery, 125

Considerations in Perioperative Pediatrics, 126

Perioperative Assessment of the Pediatric Patient, 127

Preoperative Psychologic Preparation of Pediatric Patients, 134

Pediatric Anesthesia, 135

Intraoperative Pediatric Patient Care Considerations, 139

Common Surgical Procedures, 141

Postoperative Pediatric Patient Care, 159

Chapter 9: Perioperative Geriatrics, 160

Perspectives on Aging, 160

Perioperative Assessment of the Geriatric Patient, 163

Intraoperative Considerations, 174

Postoperative Considerations, 174

Section Four: The Perioperative Environment, 176

Chapter 10: Physical Facilities, 176

Physical Layout of the Surgical Suite, 176

Transition Zones, 178

Peripheral Support Areas, 179

Operating Room, 182

Special Procedure Rooms, 191

Construction or Renovation of the Surgical Suite, 192

Chapter 11: Ambulatory Surgery Centers and Alternative Surgical Locations, 195

Ambulatory Surgical Setting, 195

Alternative Sites Where Surgery Is Performed, 203

Chapter 12: Care of the Perioperative Environment, 208

Standards for Cleanliness in the Surgical Environment, 208

Establishing the Surgical Environment, 208

Room Turnover Between Patients, 209

Daily Terminal Cleaning, 212

Chapter 13: Potential Sources of Injury to the Caregiver and the Patient, 214

Environmental Hazards, 214

Physical Hazards and Safeguards, 215

Chemical Hazards and Safeguards, 226

Biologic Hazards and Safeguards, 228

Risk Management, 230

Section Five: Surgical Asepsis and Sterile Technique, 233

Chapter 14: Surgical Microbiology and Antimicrobial Therapy, 233

Microorganisms: Nonpathogens versus Pathogens, 234

Types of Pathogenic Microorganisms, 237

Antimicrobial Therapy, 248

Chapter 15: Principles of Aseptic and Sterile Techniques, 252

What Is the Difference Between Aseptic and Sterile Techniques? 253

Transmission of Microorganisms, 254

Human-borne Sources of Contamination, 254

Nonhuman Factors in Contamination, 255

Sources of Infection, 256

Environmental Controls, 256

Standard Precautions, 259

Principles of Sterile Technique, 261

No Compromise of Sterility, 266

Chapter 16: Appropriate Attire, Surgical Hand Hygiene, and Gowning and Gloving, 267

Appropriate Operating Room Attire, 267

Surgical Hand Hygiene, 274

Gowning and Gloving, 277

Chapter 17: Decontamination

and Disinfection, 285

Central Processing Department, 285

Central Service Personnel, 286

Instrument Cleaning and Decontamination, 286

Disinfection of Items Used in Patient Care, 291

Methods of Disinfection, 292

Disposable Products, 299

Chapter 18: Sterilization, 302

Sterilization versus Disinfection, 303

Sterilization, 303

Assembly of Instrument Sets, 305

Packaging Instruments and Other Items for Sterilization,

Thermal Sterilization, 310

Chemical Sterilization, 316

Radiation Sterilization, 323

Control Measures, 323

Custom Packs, 326

Section Six: Surgical Instrumentation and Equipment, 328

Chapter 19: Surgical Instrumentation, 328

Fabrication of Metal Instruments, 328

Classification of Instruments, 329

Handling Instruments, 347

Chapter 20: Specialized Surgical Equipment, 350

Using Specialized Equipment in Surgery, 351

Electrosurgery, 351

Laser Surgery, 355

Microsurgery, 362

Ultrasonosurgery, 368

Integrated Technologies, 368

Section Seven: Preoperative Patient

Chapter 21: Preoperative Preparation of the Patient, 370

Hospitalized Patient, 370
Preoperative Preparation of All Patients, 370
Transportation to the Operating Room Suite, 381

Admission to the Operating Room Suite, 381

Chapter 22: Diagnostics, Specimens, and Oncologic Considerations, 386

Diagnosing Pathology, 387

Specimens and Pathologic Examination, 387

Radiologic Examination, 390

Magnetic Resonance Imaging, 396

Nuclear Medicine Studies, 396

Ultrasonography, 397

Sensory Evoked Potential, 399

Plethysmography, 399

Endoscopy, 400

The Patient with Cancer, 400

Section Eight: Pharmacology and Anesthesia, 411

Chapter 23: Surgical Pharmacology, 411

Pharmacology Baselines, 412

Considerations in Surgical Pharmacology, 415

Surgical Drug and Pharmaceutical Sources, 417

Pharmacologic Forms Used in Surgery, 418

Potential Complications Caused by Pharmaceuticals and Herbal Medicine, 420

Chapter 24: Anesthesia: Techniques and Agents, 422

The Art and Science of Anesthesia, 423

Choice of Anesthesia, 423

Anesthesia State, 423

Knowledge of Anesthetics, 424

Types of Anesthesia, 424

Alternatives to Conventional Anesthesia, 455

Section Nine: Intraoperative Patient Care 457

Chapter 25: Coordinated Roles of the Scrub Person and the Circulating Nurse, 457

Division of Duties, 457

Efficiency of the Operating Room Team, 485

Chapter 26: Positioning, Prepping, and Draping the Patient, 489

Preliminary Considerations, 489

Anatomic and Physiologic Considerations, 494

Equipment for Positioning, 496

Surgical Positions, 502

Physical Preparation and Draping of the Surgical Site,

Chapter 27: Physiologic Maintenance and Monitoring of the Perioperative Patient, 526 Monitoring Physiologic Functions, 527

Section Ten: Surgical Site Management, 542

Chapter 28: Surgical Incisions, Implants, and Wound Closure, 542

The Surgical Incision, 542

Surgical Landmarks, 547

Wound Closure, 550

Chapter 29: Wound Healing and Hemostasis, 573

Mechanism of Wound Healing, 573

Types of Wounds, 575

Factors Influencing Wound Healing, 576

Hemostasis, 580

Wound Management, 589

Complications of Wound Healing, 595

Postoperative Wound Infections, 596

Wound Assessment, 597

Basic Wound Care, 598

Section Eleven: Perianesthesia and Postprocedural Patient Care, 601

Chapter 30: Postoperative Patient Care, 601

Postanesthesia Care, 601

Admission to the Postanesthesia Care Unit, 604 Discharge from the Postanesthesia Care Unit, 605

Chapter 31: Potential Perioperative Complications, 607

Potential for Complications During and After Surgery,

Respiratory Complications, 608

Cardiovascular Complications, 611

Fluid and Electrolyte Imbalances, 624

Blood Volume Complications, 626

Shock, 634

Metabolic Crises, 635

latrogenic Injury, 639

Section Twelve: Surgical Specialties, 640

Chapter 32: Endoscopy and Robotic-Assisted Surgery, 640

Eight Essential Elements of Endoscopy, 640

Knowledge and Skill for a Safe Endoscopic Environment, 648

Types of Endoscopic Procedures, 649

Hazards of Endoscopy, 650

Care of Endoscopes, 651

Considerations for Patient Safety, 652

Duties of the Assistant for Flexible Endoscopy, 653

Robotic-Assisted Endoscopy, 653

Chapter 33: General Surgery, 658

Special Considerations for General Surgery, 658

Breast Procedures, 660

Abdominal Procedures, 664

Liver Procedures, 668

Splenic Procedures, 669

Pancreatic Procedures, 669

Esophageal Procedures, 670

Gastrointestinal Surgery, 671

Intestinal Procedures, 676

Colorectal Procedures, 680

Abdominal Trauma, 682

Anorectal Procedures, 684

Hernia Procedures, 685

Amputation of Extremities, 686

Chapter 34: Gynecologic and Obstetric Surgery, 689 Anatomy and Physiology of the Female Reproductive System, 690

Gynecology: General Considerations, 693

Diagnostic Techniques, 694

Vulvar Procedures, 699

Vaginal Procedures, 700

Abdominal Procedures, 703

Perioperative Obstetrics, 708

Complicated Birth, 711

Assisted Reproduction, 716

Nonobstetric Surgical Procedures and the Pregnant Patient, 717

Chapter 35: Urologic Surgery, 723

Anatomy and Physiology of the Urinary System, 723

Special Features of Urologic Surgery, 726

Surgical Procedures of the Genitourinary System, 731

Male Reproductive Organs, 743

Endocrine Glands, 752

Transsexual Surgery (Sex Reassignment), 752

Postoperative Complications of Urologic Surgery, 753

Chapter 36: Orthopedic Surgery, 755

The Art and Science of Orthopedic Surgery, 755

Anatomy and Physiology of the Musculoskeletal System, 756

Special Features of Orthopedic Surgery, 759

Extremity Procedures, 764

Fractures, 765

Joint Procedures, 770

Repair of Tendons and Ligaments, 778

Cast Application, 779

Complications after Orthopedic Surgery, 783

Chapter 37: Neurosurgery of the Brain and Peripheral Nerves, 785

Anatomy and Physiology of the Brain, 785

Special Considerations in Neurosurgery, 787

Patient Care Considerations for Craniotomy, 790

Surgical Procedures of the Cranium, 794

Peripheral Nerve Surgery, 801

Chapter 38: Spinal Surgery, 804

Anatomy and Physiology of the Spinal Cord and

Vertebral Column, 804

Special Considerations for Spinal Surgery, 807

Pathology of the Vertebrae and Spinal Cord, 812

Surgical Procedures of the Spine, 816

Chapter 39: Ophthalmic Surgery, 823

Anatomy and Physiology of the Eye, 823

Ophthalmic Surgical Patient Care, 824

Special Features of Ophthalmic Surgery, 826

Ocular Surgical Procedures, 829

Eye Injuries, 842

Ophthalmic Lasers, 843

Chapter 40: Plastic and Reconstructive Surgery, 845

Special Features of Plastic and Reconstructive Surgery, 845

Skin and Tissue Grafting, 848

Head and Neck Plastic and Reconstructive Procedures,

Plastic and Reconstructive Procedures of Other Body Areas, 859

Burns, 865

Chapter 41: Otorhinolaryngologic and Head and Neck Surgery, 872

General Considerations in Ear, Nose, and Throat Procedures, 872

Ear. 875

Nose, 880

Oral Cavity and Throat, 885

Neck, 888

Face and Skull, 897

Chapter 42: Thoracic Surgery, 905
Anatomy and Physiology of the Thorax, 905
Special Features of Thoracic Surgery, 908
Thoracic Surgical Procedures, 916
Chest Trauma, 919
Intrathoracic Esophageal Procedures, 920
Complications of Thoracic Surgery, 921

Intrathoracic Esophageal Procedures, 920
Complications of Thoracic Surgery, 921

Chapter 43: Cardiac Surgery, 923
Anatomy of the Heart and Great Vessels, 923
Physiology of the Heart, 925
Special Features of Cardiac Surgery, 926
Cardiac Surgical Procedures, 934
Mechanical Assist Devices, 941
Complications of Cardiac Surgery, 946

Chapter 44: Vascular Surgery, 948
Anatomy and Physiology of the Vascular System, 948
Vascular Pathology, 950
Diagnostic Procedures, 951
Special Features of Vascular Surgery, 953

Conservative Interventional Techniques, 956
Vascular Surgical Procedures, 959
Chapter 45: Organ Procurement and
Transplantation, 970

Types of Transplants, 970
Tissue Transplantation, 970
Tissue Transplantation, 970
Organ Transplantation, 973