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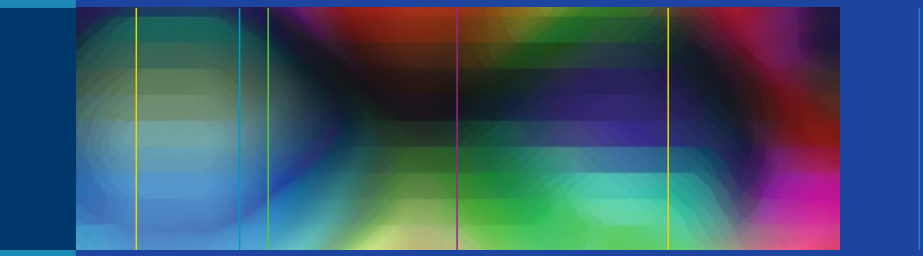

The Perioperative Medicine Consult Handbook

Second Edition

Springer

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Dedication

We dedicate this handbook to Chris Wong, for his foundational work on all previous editions.

We also thank the residents and students at the University of Washington, who inspire us to be lifelong teachers and learners.

Preface

The goal of this handbook is to support our colleagues (medical providers, trainees, and students) in providing thoughtful, evidence-based perioperative patient care. In the pages that follow, we aim to provide a focused review of medical issues that arise around the time of surgery along with suggested management strategies based on both the science and art of perioperative medicine.

The foundation of excellence in the care of surgical patients is teamwork. Collaboration and clear communication between the perioperative medicine consultant, surgeon, anesthesiologist, primary and specialty providers, inpatient team (including nurses, pharmacists, therapists, etc.), and the patient improves care, advances the knowledge of each team member, and is incredibly enjoyable. This text was created in partnership with dozens of colleagues at the University of Washington Medical Center, Harborview Medical Center, and the Seattle Veterans Affairs Puget Sound Health Care System. It has been our great privilege to learn and serve our patients together.

Seattle, WA, USA

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Chapter 1
Introduction

Kara J. Mitchell and Nason P. Hamlin

Perioperative medicine consultation is an exciting and evolving field. We believe that collaboration between internists, anesthesiologists, and surgeons improves patient care, especially for patients with serious or complex medical conditions. We created this handbook to provide guidance for the general medical care of a patient planning for and recovering from noncardiac surgery. The information presented here is based on a combination of clinical experience, guidelines, and evidence-based medicine.

As with any handbook, the material presented is simply a guide and is no substitute for clinical judgment and individualized patient care.

GENERAL GUIDELINES

PREOPERATIVE ROLE

- Risk-stratify patients prior to surgery (AVOID the term "cleared for surgery")
- Provide recommendations to optimize a patient's condition prior to surgery
- Anticipate perioperative events, and suggest potential ways of mitigating the risk

PERIOPERATIVE ROLE

- Provide postoperative advice with regard to a patient's medical problems
- Identify and manage medical complications of surgery that may arise

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Medicine is medicine, whether a patient has just undergone, or is about to undergo, a surgical procedure. Creating a differential diagnosis, weighing risks and benefits, and providing timely treatment—none of these skills disappear when we see a patient perioperatively. There are, however, a few key characteristics that distinguish postoperative patients:

- Natural history: Most patients should get better if their case is uncomplicated.
- NPO status: Administration of nutrition and/or medications may be restricted for a period of time. Medications may need to be given per rectum, sublingually, intravenously, transdermally, or via inhalation.
- Medication side effects: Most patients receive opioid-type pain medications and are at risk for opioid-related complications: delirium, decreased level of consciousness, respiratory depression, constipation, and urinary retention. Most patients have received sedation and are at risk for aspiration, delirium, and other complications from sedating medications.
- Lines and tubes: Patients may begin their postoperative course with more lines and tubes than medical patients; these are removed as recovery progresses.
- Third spacing: Patients undergoing many types of surgery (especially abdominal surgery) have significant third spacing of fluids and are thus, at least initially, intravascularly volume depleted.

The medical consultant should use caution or refrain from making recommendations about certain subjects, unless first discussed with the patient's surgeon or anesthesiologist (see Table 1.1).

COMMUNICATION IS VITAL!

KEEP UP A DIALOGUE WITH THE SURGICAL TEAM

- Always call with critical recommendations. Do not wait for the surgical team to discover an important recommendation that you made on morning rounds when they make evening rounds.
- Know the habits of your primary surgical team—different surgeons round at different times, and surgery teams have varying compositions of students, house staff, physician assistants, nurse practitioners, and attending physicians.

TABLE 1.1 SUBJECTS TO DISCUSS WITH THE PATIENT'S SURGEON OR ANESTHESIOLOGIST

Avoid recommendations on these subjects	
Type of anesthesia; invasive intraoperative monitoring such as pulmonary artery (PA) catheters or transesophageal echocardiography (TEE)	These decisions are best left to the anesthesiologist
Per rectum (PR) meds in any surgery with bowel manipulation (including abdominal surgery, cystectomy, prostatectomy, and gynecologic surgery)	PR medications may affect the surgical site
Diet advancement with abdominal surgery	Let the surgery team advance the diet
Discuss with the surgical team before making recommendations or writing orders on these subjects	
Venous thromboembolism (VTE) chemoprophylaxis	Good to recommend, but first discuss bleeding risk with the surgery team
Anticoagulation, including antiplatelet agents	Bleeding risk needs to be discussed with the surgery team
Pain medications	Pain medications should be handled by a single team or service to maintain consistency
Transfusion of blood products	If a patient truly requires a transfusion, it is best to discuss with the surgery team first (see Chap. 26)
Antibiotics	The possibility of infection should be discussed with the surgical team; prophylactic antibiotics are generally discontinued within 24 h of surgery. Antibiotic use risks *Clostridium difficile* infection, antibiotic-associated diarrhea, antibiotic resistance, and side effects
Postoperative fever workup, especially within the first 72 h	Early postoperative fever may be due to cytokine release or other causes and not due to infection (see Chap. 45)

- In general, it is acceptable to discuss your recommendations with the patient and family. Be careful, however, when discussing issues specific to the surgery—these are usually best left to the surgeon. There may also be recommendations that are pending your discussion with the surgeon; it is preferable to wait until that discussion has taken place before speaking with the patient and family.

DOCUMENTATION IN THE MEDICAL RECORD IS ESSENTIAL!

It is best to document your recommendations immediately after seeing the patient. You may have communicated very important recommendations verbally—but they must also be in the chart to:

- Make your recommendations official
- Limit risk for confusion or errors when submitting orders
- Improve communication with other providers involved in the patient's care

INITIAL CONSULTS

- Make sure that the name of the provider requesting consultation and reason for consultation is documented in the chart (e.g., "Dr._____ has requested Medicine Consultation for advice regarding management of diabetes.").
- For format of initial consultation, see Chap. 3. Be brief yet thorough and specific.
- Include your contact information.

FOLLOW-UP NOTES

- In general, a note should be completed every day in the chart.
- If you plan to follow the patient less frequently than daily, you should communicate this in the chart: "I will follow up with the patient after surgery" or "Dr._____ will be on call this weekend, but will not plan to see the patient unless you call. Please call if questions arise. I will follow up with the patient on Monday."

- Assessments should be by diagnosis, not organ system: e.g., "diabetes," not "endocrine." Start with the most important medical diagnosis, e.g., "atrial fibrillation," instead of "post-op AAA repair."
- In most cases, you should also communicate with the primary team verbally and document in your note with whom you have spoken.

"COMANAGEMENT" VERSUS "CONSULTATION"

Each hospital and service has a unique balance of comanagement versus consultation. Some surgical services work with internal medicine physicians purely as consultants and ask their advice as needed. In other hospitals, internists actively manage all the medical aspects of a patient's perioperative care, including performing daily assessments, being the first call for nursing staff, and writing orders. See Chap. 2 for further details.

Ultimately, the level of assistance that should be provided depends on your preferences and those of the primary service; clear communication is the key to defining this balance.

Chapter 2
Styles of Medical Consultation

Rachel E. Thompson and Nason P. Hamlin

Medicine departments at many academic institutions have created Medicine Consult Services that provide consultative and perioperative care in the hospital. At some institutions consult services are engaged in both pre- and postoperative care, providing continuity for patients. At other institutions, solely preoperative evaluations and recommendations are provided for surgeons to incorporate into their care. In yet another model, consultations are only available postoperatively. Other models have included comanagement agreements for certain situations, commonly with orthopedic or neurosurgical colleagues.

At the University of Washington Medical Center, where most of the complex surgery is elective, there is a consultative, teaching, and continuity model. The Medicine Consult Service is staffed by internists specializing in perioperative medicine. Comprehensive outpatient medical consultations are done at the request of the surgeon. The same internist who performs the outpatient consultation follows the patient daily when admitted to the hospital for surgery, serving as a consultant (not a comanager). The internist advises and teaches the surgical teams about the medical aspects of perioperative care. New inpatient perioperative consultations are also performed and followed by the Medicine Consult Service physicians. This continuity model minimizes handoffs and enhances satisfaction for patients, surgeons, and the medical consultant.

At Harborview Medical Center, our county hospital run by the University of Washington, there is a smaller, but growing, preoperative practice that was modeled after the University's clinic. The larger practice at present is the inpatient consultative service—this is a teaching service with medical, surgical, and anesthesia residents overseen by an internist who specializes in perioperative care. Harborview is a regional level 1 trauma center and thus many of the

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surgeries are unplanned; medicine consultation is typically requested when surgical patients are identified as medically complex or if medical complications arise postoperatively.

In community hospitals, hospitalists and primary care providers often incorporate perioperative care into their daily work. This can entail caring directly for surgical patients admitted to the hospitalist service but can also mean providing consultation and recommendations to surgical colleagues. Some hospitalist practices have a specified individual available daily for consultations; others perform both primary and consultative care within any given day. Comanagement is also entering into some community practices where a hospitalist may work on a surgical unit or with a particular surgical service. In some cases, preoperative clinics are available which are run by anesthesiologists or in partnership with medical practitioners.

The optimal method of medical consultation is unknown and is likely best tailored to meet the needs of each hospital's patients and care delivery structure. As the field grows, we continue to develop the art and science of best perioperative care practices, improve testing strategies, avoid unnecessary cost, minimize complications, and optimize patient outcomes.