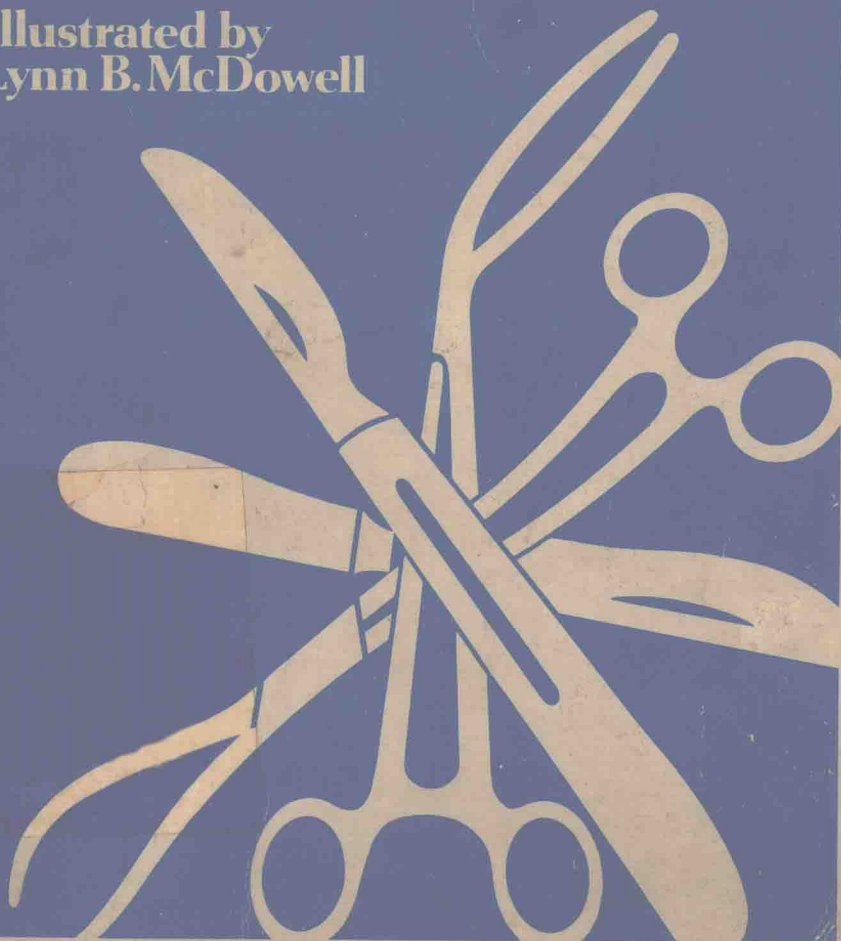
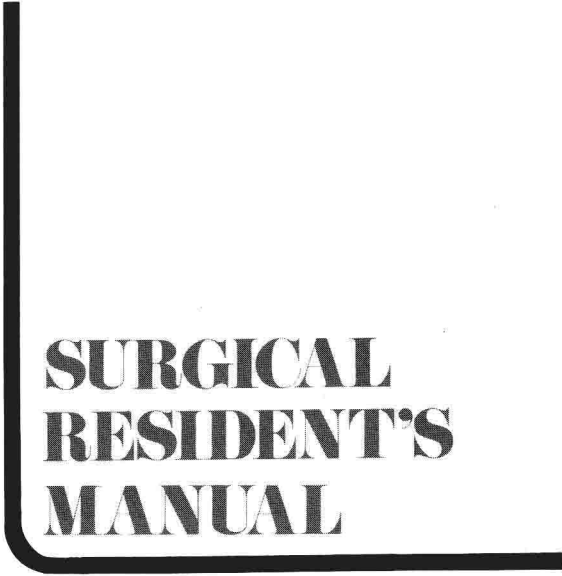


# **SURGICAL RESIDENT'S MANUAL**

**Richard M. Stillman  
Philip N. Sawyer**

**Illustrated by  
Lynn B. McDowell**





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*To Our Devoted Wives,  
Barbara and Grace*

# Preface

This manual is meant to be a concise and portable source of the details for those essential procedures which the surgical student, intern, or resident is often called upon to perform without the assistance of a more experienced physician. We have attempted to trace steps in diagnosis and management of the adult patient from the emergency room through the operating room to discharge. In each case, the outline ends at the point where the resident should proceed no further without the assistance of an attending surgeon or chief resident.

Every attempt has been made to be complete and accurate in indications and dosages; since standards may change, however, it is essential to keep abreast of current recommendations.

Antonina Milazzo cheerfully and tirelessly accepted the arduous task of typing and retyping the manuscript. Drs. K.R. Reddy and S.N. Haque graciously reviewed the text, and Robert E. McGrath and Douglas A. Jones of Appleton provided professional advice and guidance to bring this book to publication.

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**GUIDELINES TO SURGICAL DIAGNOSIS**

Modalities available in the diagnosis of the surgical patient include the following:

1. *History and Physical:* Nine out of ten diagnoses can be made by history and physical alone. For example, a recurrent lump in the appropriate area implies an inguinal hernia. Claudication and diminished femoral pulses imply aortoiliac occlusive disease. In such cases, further workup is necessary only to rule out associated pathology which would change the approach to anesthesia or therapy.
2. *Blood Tests:* Routine blood tests on admission include complete blood count, electrolytes, BUN, and glucose. Liver and heart enzymes, calcium, and phosphorus are indicated in specific cases. A coagulation profile should be obtained for patients having a history compatible with bleeding diathesis.

3. *Examination of Body Fluids:* Including sputum, gastric, urine, stool, and peritoneal or pleural taps.
4. *Electrocardiogram:* Routine for patients over 40 or those with a history of cardiac disease.
5. *Plain X-rays:* Chest, abdomen (flat and upright).
6. *Contrast Studies:* Allow evaluation of hollow viscera and vessels. For example, upper gastrointestinal series, small bowel follow-through, oral cholecystogram, intravenous cholangiogram, ERCP, barium enema, arteriography.
7. *Scans:* Allow evaluation of solid organs including lung, liver, spleen, kidney, pancreas, and bone.
8. *Sonography:* Inaccurate in postoperative areas or if contrast material is in the G.I. tract. Otherwise, useful for differentiation of solid versus cystic masses, evaluation of size of the aorta, needle aspiration for confirmation of abscesses, evaluation of size and content of gallbladder or common duct.
9. *Endoscopy:* Esophagoscopy, gastroduodenoscopy, colonoscopy, proctosigmoidoscopy, laparoscopy.

## ADMISSION WORKUP

A careful and complete admission history and physical is essential in the diagnosis of the acute condition, underlying conditions, and assessment of medications or allergies that will affect therapy. It should not be left to chance. A variety of standard forms are available and can be modified to be appropriate to your particular service (see Appendix A).

### Indications for Elective or Emergent\* Operation

#### *Abdominal Trauma*

- \*1. Shock despite attempted resuscitation
- \*2. Peritoneal signs
- \*3. Free air or fluid on X-Ray
- \*4. Positive tap or lavage
- \*5. Suspicion of intraabdominal injury based on pattern of abrasions or symptomatology
- \*6. Increasing abdominal symptoms or signs

*Carotid Artery Occlusive Disease*

- \*1. Acute stroke after angiography
- 2. Transient ischemic attack
- 3. Acute stroke (delay at least 3 weeks)
- 4. Asymptomatic bruit (debated)
- 5. Other neurological signs (debated)

*Cholelithiasis*

- \*1. Acute cholecystitis not rapidly responsive to nonoperative therapy
- \*2. Cholangitis
- 3. Documented gallstones (except high risk patients who are asymptomatic)
- 4. Common duct stones

*Duodenal Ulcer*

- \*1. Refractory or massive hemorrhage
- \*2. Perforation
- 3. Refractory to medical therapy
- 4. Obstruction
- 5. Zollinger-Ellison syndrome

*Hiatal Hernia (with esophagitis)*

- \*1. Hemorrhage
- 2. Failure of medical treatment
- 3. Peptic ulceration, stricture
- 4. Respiratory complication
- 5. During laparotomy for concomitant disorders (commonly cholecystectomy)
- 6. Paraesophageal hernia

*Hyperparathyroidism*

- 1. Symptoms
- 2. Calcium consistently over 11 mg%
- 3. Urinary calcium over 250 mg daily on low calcium diet

*Idiopathic Thrombocytopenic Purpura*

- \*1. Intracranial bleeding
- 2. No response to steroids
- 3. Relapses
- 4. Disease lasting more than 1 year

*Inguinal, Umbilical, Incisional Hernia*

- \*1. Emergently for incarceration
- 2. Electively in other cases

*Inflammatory Bowel Disease*

- \*1. Abscess
- \*2. Perforation
- \*3. Intestinal obstruction
- \*4. Bleeding
- \*5. Toxic megacolon
- 6. Refractory to nonoperative therapy
- 7. Fistula
- 8. Obstructive uropathy
- 9. Carcinoma

*Intestinal Obstruction*

- \*1. Peritoneal signs or suspected closed loop
- \*2. No improvement in 24 hours of nonoperative treatment
- \*3. Some advocate immediate operation after hydration
- \*4. Large bowel obstruction
- \*5. Suspected ischemic bowel

*Multinodular Goiter*

- \*1. Tracheal compression
- 2. Very large
- 3. Evidence of malignancy
- 4. Palpable nodes
- 5. One dominant hard nodule
- 6. Increase in size on hormone therapy
- 7. Cold nodule on scan
- 8. Distant metastases proved to be thyroidal in origin

*Pancreatitis*

- \*1. Progressive deterioration on nonoperative therapy
- \*2. Abscess, infected pseudocyst
- \*3. Bleeding
- 4. Diagnosis in doubt
- 5. Elective operation for intractable pain, malabsorption, jaundice, suspected pancreatic carcinoma

*Peripheral Vascular Occlusive Disease*

- \*1. Embolization or thrombosis

2. Disabling claudication unresponsive to nonoperative therapy
3. Rest pain
4. Threatened limb loss
5. Potentially dangerous lesion on arteriography

#### *Pulmonary Embolism (IVC Ligation)*

- \*1. Recurrent embolus while adequately heparinized
- \*2. Anticoagulants contraindicated
- \*3. Massive life-threatening embolus (pulmonary embolectomy)

#### *Variceal Bleeding*

- \*1. Failure of nonoperative treatment
- 2. Previous bleeding
- 3. Electively (debated)

## PREOPERATIVE PREPARATION

### Preoperative Note

The preoperative note should include a brief history and physical findings, required laboratory values, chest X-ray report, EKG report, indications for surgery, surgery proposed, medications patient is receiving, and allergies. It should also indicate whether type and crossmatch was obtained. A standard preop form will help ensure that the patient is ready for anesthesia and surgery. (See Appendix B.)

### Preoperative Orders

In almost every case include:

1. Obtain consent, clergy
2. Shave and preparation—this is best performed immediately prior to the operation, not the night before
3. Antiseptic (e.g., hexachlorophene) shower or scrub to area—this is best started 24 to 48 hours before surgery
4. Nothing by mouth after midnight

5. Void on call from operating room
6. Preop sedation as ordered by the anesthesiologist

In some cases include:

7. Prophylactic antibiotics where prosthetic material is to be inserted, contaminated viscus to be entered, history of cardiac valvular disease or prosthesis
8. Heparin—5000 units subcutaneously—2 hours prior to surgery and every 8 to 12 hours postoperatively as thromboembolism prophylaxis in elderly patients, those with history of venous disease, bedridden patients, or patients on oral contraceptives
9. Respiratory therapy with incentive spirometer or intermittent positive pressure breathing if chronic lung disease
10. Intravenous hydration for elderly or dehydrated patients especially if the case is scheduled late in the day
11. Essential medications such as insulin or corticosteroids to be given parenterally
12. Enema the evening prior to surgery

### Hints

1. Patients at the extremes of life and diabetics should be scheduled for operation early in the day and may require intravenous fluids overnight prior to the operation.
2. Patients with chronic obstructive pulmonary disease, or asthma require arterial blood gas determinations.

## POSTOPERATIVE CARE

### Immediate Postoperative Orders

After major surgery, a patient's needs are significantly different from what they were before the operation. Hence, a completely new set of orders should be written postoperatively based on physiological changes produced by the operation or by



the anesthesia. A simple mnemonic for remembering the overall pattern of postoperative orders is *POSTOP CARE*.

1. *Procedure and condition*—given for the benefit of recovery-room nurses.
2. *Observe vital signs, intake and output, how often?*
3. *Studies*—such as blood tests, urinalysis, chest X-ray, electrocardiogram.
4. *Tubes and drains*—to what type of suction, dressing change, etc.
5. *Oral intake or intravenous fluids.*
6. *Pain medication.*
7. *Catheterization*—such as catheterize bladder if no urine within 8 hours of operation.
8. *Activity*—such as complete bed rest, bathroom privileges, or out of bed ad lib.
9. *Respiratory therapy*—such as intermittent positive pressure breathing for 15 minutes every 2 hours in the early postoperative period, incentive spirometer, or blow glove.
10. *Evaluate medications*—make sure to renew essential preoperative medication such as insulin or antihypertensives. In addition, consider medications for sleep, bowel function, low dose heparin or antibiotics. Discontinue medication no longer needed.

### Postoperative Checkup

The frequency of required postoperative examinations of the patient relates to the severity of the patient's condition and to the specific surgical procedures. In general, for most surgical procedures a visit in the late afternoon or early evening of the day of operation and morning and afternoon visits in the early postoperative period are indicated. The following should always be noted:

1. Vital signs
2. Intake and output
3. Examination of heart, lungs, area of wound, and extremities for phlebitis