

FIRST AID FOR THE

MEDICINE clerkship

A STUDENT TO STUDENT GUIDE

•
Succeed in the clerkship, impress on the wards

•
High-yield topics

•
Tear-out cards to help you on the wards

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LATHA G. STEAD • S. MATTHEW STEAD
MATTHEW S. KAUFMAN
BARBARA G. LOCK • SAMY I. MCFARLANE

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THE STUDENT TO STUDENT GUIDE

SERIES EDITORS:

LATHA G. STEAD, MD

*Assistant Professor of Emergency Medicine
Mayo Medical School
Rochester, Minnesota*

S. MATTHEW STEAD, MD, PhD

*Class of 2001
State University of New York—Downstate Medical Center
Brooklyn, New York*

MATTHEW S. KAUFMAN, MD

*Resident in Internal Medicine
Long Island Jewish Medical Center
Albert Einstein College of Medicine
New Hyde Park, New York*

TITLE EDITOR:

BARBARA G. LOCK, MD

*Attending Physician in Emergency Medicine
Columbia Presbyterian Medical Center
New York, New York*

SUPERVISING EDITOR AND CONTRIBUTING AUTHOR:

SAMY I. MCFARLANE, MD, FACE, CCD

*Assistant Professor of Medicine and Radiology
Division of Endocrinology, Diabetes and Hypertension
Director, Fellowship Program in Endocrinology
Director for Education, Third Year Clerkship in Medicine
Department of Medicine
State University of New York Health Science Center—Brooklyn
Brooklyn, New York*

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cwflampski@netscape.net

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Contributing Authors

ROBIN R. BLUM, MD

Resident in Dermatology
Mount Sinai School of Medicine
New York, New York
Dermatology

THOMAS M. BOYD, MD

Resident in Emergency Medicine
Jacobi-Montefiore EM Residency
Albert Einstein College of Medicine
Bronx, New York
Nephrology and Acid-Base, Endocrinology

ERIC MICHAEL FIELDS, DO

Resident in Emergency Medicine
Beth Israel Medical Center
Albert Einstein College of Medicine
New York, New York
Gastroenterology

BARBARA G. LOCK, MD

Attending Physician in Emergency Medicine
Columbia Presbyterian Medical Center
New York, New York
*Cardiology, Pulmonology, Gastroenterology, Health
Promotion*

R. ANAND NARASIMHAN, MD

Resident in Internal Medicine
Mayo Graduate School of Medicine
Rochester, Minnesota
Neurology, Hematology—Oncology



JONATHAN POSNER, MD

Resident in Radiology
Cornell/New York Medical Center
New York, New York
Rheumatology

713 00 24216

Andi Pingitore
713-200-5518
iii

Introduction

This clinical study aid was designed in the tradition of the *First Aid* series of books, formatted in the same way as the other titles in this series. Topics are listed by bold headings to the left, while the “meat” of the topic comprises the middle column. The outside margins contain mnemonics, diagrams, summary or warning statements, “pearls,” and other memory aids. These are further classified as “exam tip” noted by the  symbol and “ward tip” noted by the  symbol.

The content of this book is based on the Committee of Directors in Internal Medicine (www.im.org/cdim/) recommendations for the internal medicine curriculum for third-year medical students. Each of the chapters contain the major topics central to the practice of internal medicine and closely parallel CDIM’s medical student learning objectives.

The Medicine clerkship can be an exciting hands-on learning experience. For some medical students, it may be the first opportunity for patient interaction during medical school. There are two keys to doing well in this clerkship: Treat all patients and staff with respect and kindness, and organize your learning. You will find that rather than simply preparing you for success on the clerkship exam, this book will also help guide you in the clinical diagnosis and treatment of the many interesting problems you will see during your medicine rotation.

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Anderson Spickard III, MD

Director of Medical Student Clerkships
Department of Medicine
Vanderbilt University School of Medicine
Nashville, Tennessee

Kevin D. Whittle, MD

Assistant Professor of Internal Medicine
Third-Year Clerkship Director
University of South Dakota School of Medicine
Sioux Falls, South Dakota

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How to Succeed in the Medicine Clerkship

Be on Time

Most medical ward teams begin rounding between 7 and 8 A.M. If you are expected to “pre-round,” you should give yourself at least 10 minutes per patient that you are following to see the patient and learn about the events that occurred overnight. Like all working professionals, you will face occasional obstacles to punctuality, but make sure this is occasional. When you first start a rotation, try to show up at least 15 minutes early until you get the routine figured out.

Dress in a Professional Manner

Even if the resident wears scrubs and the attending wears stiletto heels, you must dress in a professional, conservative manner. Wear a *short* white coat over your clothes unless discouraged (as in pediatrics).

Men should wear long pants, with cuffs covering the ankle, a long collared shirt, and a tie. No jeans, no sneakers, no short-sleeved shirts.

Women should wear long pants or knee-length skirt and a blouse or dressy sweater. No jeans, no sneakers, no heels greater than 1½ inches, no open-toed shoes.

Both men and women may wear scrubs occasionally, during overnight call or in the operating room. Do not make this your uniform.

Act in a Pleasant Manner

The medical rotation is often difficult, stressful, and tiring. Smooth out your experience by being nice to be around. Smile a lot and learn everyone’s name. If you do not understand or disagree with a treatment plan or diagnosis, do not “challenge.” Instead, say “I’m sorry, I don’t quite understand, could you please explain. . . .” Be empathetic toward patients.

Be Aware of the Hierarchy

The way in which this will affect you will vary from hospital to hospital and team to team, but it is always present to some degree. In general, address your questions regarding ward functioning to interns or residents. Address your medical questions to attendings; make an effort to be somewhat informed on your subject prior to asking attendings medical questions.

Address Patients and Staff in a Respectful Way

Address patients as Sir, Ma’am, or Mr., Mrs., or Miss. Try not to address patients as “honey,” “sweetie,” and the like. Although you may feel these names are friendly, patients will think you have forgotten their name, that you are being inappropriately familiar, or both. Address all physicians as “doctor,” unless told otherwise.

Take Responsibility for Your Patients

Know everything there is to know about your patients: their history, test results, details about their medical problem, and prognosis. Keep your intern or resident informed of new developments that they might not be aware of, and ask them for any updates you might not be aware of. Assist the team in developing a plan; speak to radiology, consultants, and family. Never give bad news to patients or family members without the assistance of your supervising resident or attending.

RESPECT PATIENTS' RIGHTS

1. All patients have the right to have their personal medical information kept private. This means do not discuss the patient's information with family members without that patient's consent, and do not discuss any patient in hallways, elevators, or cafeterias.
2. All patients have the right to refuse treatment. This means they can refuse treatment by a specific individual (you, the medical student), or of a specific type (no nasogastric tube). Patients can even refuse life-saving treatment. The only exceptions to this rule are if the patient is deemed to not have the capacity to make decisions or understand situations, in which case a health care proxy should be sought, or if the patient is suicidal or homicidal.
3. All patients should be informed of the right to seek advanced directives on admission. Often, this is done by the admissions staff, in a booklet. If your patient is chronically ill or has a life-threatening illness, address the subject of advanced directives with the assistance of your attending.

Volunteer

Be self-propelled, self-motivated. Volunteer to help with a procedure or a difficult task. Volunteer to give a 20-minute talk on a topic of your choice. Volunteer to take additional patients. Volunteer to stay late.

Be a Team Player

Help other medical students with their tasks; teach them information you have learned. Support your supervising intern or resident whenever possible. Never steal the spotlight, steal a procedure, or make a fellow medical student look bad.

Be Honest

If you don't understand, don't know, or didn't do it, make sure you always say that. Never say or document information that is false (a common example: "bowel sounds normal" when you did not listen).

Keep Patient Information Handy

Use a clipboard, notebook, or index cards to keep patient information, including a miniature history and physical, and lab and test results, at hand.

Present Patient Information in an Organized Manner

Here is a template for the “bullet” presentation:

“This is a [age]-year-old [gender] with a history of [major history such as HTN, DM, coronary artery disease, CA, etc.] who presented on [date] with [major symptoms, such as cough, fever, and chills] and was found to have [working diagnosis]. [Tests done] showed [results]. Yesterday, the patient [state important changes, new plan, new tests, new medications]. This morning the patient feels [state the patient’s words], and the physical exam is significant for [state major findings]. Plan is [state plan].

The newly admitted patient generally deserves a longer presentation following the complete history and physical format.

Some patients have extensive histories. The whole history should be present in the admission note, but in ward presentation, it is often too much to absorb. In these cases, it will be very much appreciated by your team if you can generate a **good summary** that maintains an accurate picture of the patient. This usually takes some thought, but it’s worth it.

HOW TO PRESENT A CHEST RADIOGRAPH (CXR)

- First, confirm that the CXR belongs to your patient.
- If possible, compare to a previous film.

Then, present in a systematic manner:

1. *Technique*: Rotation, anteroposterior (AP) or posteroanterior (PA), penetration, inspiratory effort.
2. *Bony structures*: Look for rib, clavicle, scapula, and sternum fractures.
3. *Airway*: Look for tracheal deviation, pneumothorax, pneumomediastinum.
4. *Pleural space*: Look for fluid collections, which can represent hemothorax, chylothorax, pleural effusion.
5. *Lung parenchyma*: Look for infiltrates and consolidations: These can represent pneumonia, pulmonary contusions, hematoma, or aspiration. The location of an infiltrate can provide a clue to the location of a pneumonia:
 - Obscured right (R) costophrenic angle = Right lower lobe
 - Obscured left (L) costophrenic angle = Left lower lobe
 - Obscured R heart border = Right middle lobe
 - Obscured L heart border = Left upper lobe

6. *Mediastinum*: Look at size of mediastinum—a widened one (> 8 cm) goes with aortic dissection. Look for enlarged cardiac silhouette ($> \frac{1}{2}$ thoracic width at base of heart), which may represent congestive heart failure (CHF), cardiomyopathy, or pericardial effusion.
7. *Diaphragm*: Look for free air under the right hemidiaphragm (suggests perforation). Look for stomach, bowel, or nasogastric tube (NGT) above diaphragm (suggests diaphragmatic rupture).
8. *Tubes and lines*:
 - Identify all tubes and lines.
 - An endotracheal tube should be 2 cm above the carina. A common mistake is right mainstem bronchus intubation.
 - A chest tube (including the most proximal hole) should be in the pleural space (not in the lung parenchyma).
 - An NGT should be in the stomach and uncoiled.
 - The tip of a central venous catheter (central line) should be in the superior vena cava (not in the right atrium).
 - The tip of a Swan–Ganz catheter should be in the pulmonary artery.
 - The tip of a transvenous pacemaker should be in the right atrium.

A sample CXR presentation may sound like:

This is the CXR of Mr. Jones. The film is an AP view with good inspiratory effort. There is an isolated fracture of the eighth rib on the right. There is no tracheal deviation or mediastinal shift. There is no pneumo- or hemothorax. The cardiac silhouette appears to be of normal size. The diaphragm and heart borders on both sides are clear; no infiltrates are noted. There is a central venous catheter present, the tip of which is in the superior vena cava.

HOW TO PRESENT AN ELECTROCARDIOGRAM (ECG)

- First, confirm that the ECG belongs to your patient.
- If possible, compare to a previous tracing.

Then, present in a systematic manner:

1. *Rate* (see Figure 1-1): The rate is [number of] beats per minute (bpm):
 - The ECG paper is scored so that one big box is .20 seconds. These big boxes consist of five little boxes, each of which is 0.04 seconds.

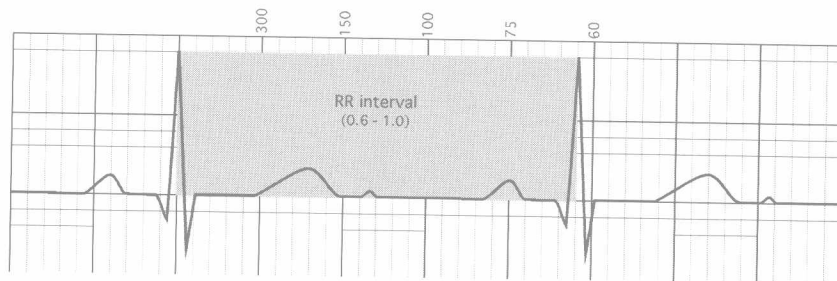


FIGURE 1-1. Calculating rate.

- A quick way to calculate rate when the rhythm is regular is the mantra: **300, 150, 100, 75, 60, 50** ($= 300 / \#$ large boxes), which is measured as the number of large boxes between two QRS complexes. Therefore, a distance of one large box between two adjacent QRS complexes would be a rate of 300, while a distance of five large boxes between two adjacent QRS complexes would be a rate of 60.
 - For irregular rhythms, count the number of complexes that occur in a 6-second interval (30 large boxes) and multiply by 10 to get a rate in bpm.
2. *Rhythm*: The rhythm is [sinus]/[atrial fibrillation]/[atrial flutter] or other:
- If p waves are present in all leads and upright in leads I and aVF, then the rhythm is sinus. Lack of p waves suggests a disorganized atrial rhythm, a junctional rhythm, or a ventricular rhythm. A ventricular rhythm (V Fib or V Tach) is an unstable one (could spell imminent death), and you should be getting ready for advanced cardiac life support (ACLS).
 - Normal sinus rhythm is usually a regular narrow-complex rhythm with each QRS complex preceded by a p wave.
3. *Axis* (see Figure 1-2): The axis is [normal]/[deviated to the right]/[deviated to the left]:
- If I and aVF are both upright or positive, then the axis is normal.
 - If I is upright and aVF is upside down, then there is left axis deviation (LAD).

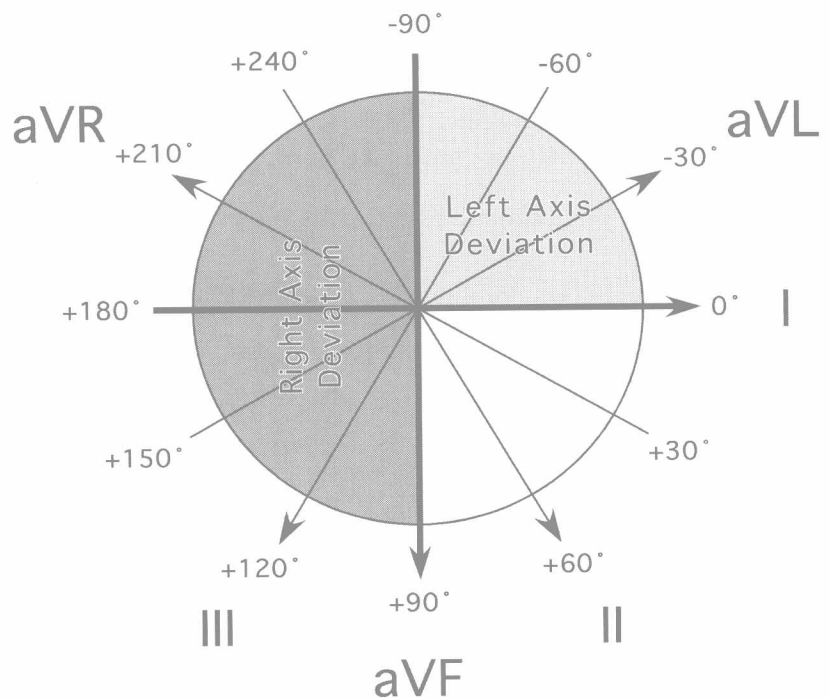


FIGURE 1-2. ECG axes.

- If I is upside down and aVF is upright, then there is right axis deviation (RAD).
 - If I and aVF are both upside down or negative, then there is extreme RAD.
4. *Intervals* (see Figure 1-3): The [PR]/[QRS] intervals are [normal]/[shortened]/[widened]:
- Normal PR interval = .12 to .20 seconds:
 - Short PR is associated with Wolff–Parkinson–White syndrome (WPW).
 - WPW syndrome is characterized by a “delta” wave, or slurred upstroke of QRS complex.
 - Long PR interval is associated with heart block of which there are three types:
 - First-degree block: PR interval > .20 seconds (one big box)
 - Second-degree (Mobitz type I or Wenckebach) block: PR interval lengthens progressively until a QRS is dropped.
 - Second-degree (Mobitz type II) block: PR interval is constant, but one QRS is dropped at a fixed interval.
 - Third-degree heart block: Complete AV dissociation
 - Normal QRS interval \leq .12 seconds:
 - Prolonged QRS is seen when the beat is initiated in the ventricle rather than the sinoatrial node, when there is a bundle branch block, and when the heart is artificially paced with longer QRS intervals. Prolonged QRS is also noted in tricyclic overdose and Wolfe–Parkinson–White syndrome.
5. *Wave morphology* (see Figure 1-4):
- a. *Ventricular hypertrophy*: There [is/is no] [left/right] [ventricular/atrial] hypertrophy:
- There are multiple criteria for determining right (RVH) and left ventricular hypertrophy (LVH). A few are listed here:
 - *Clues for LVH*:
 - $R_I > 15$ mm
 - $R_{I, II \text{ or } aVF} > 20$ mm
 - $R_{aVL} > 11$ mm

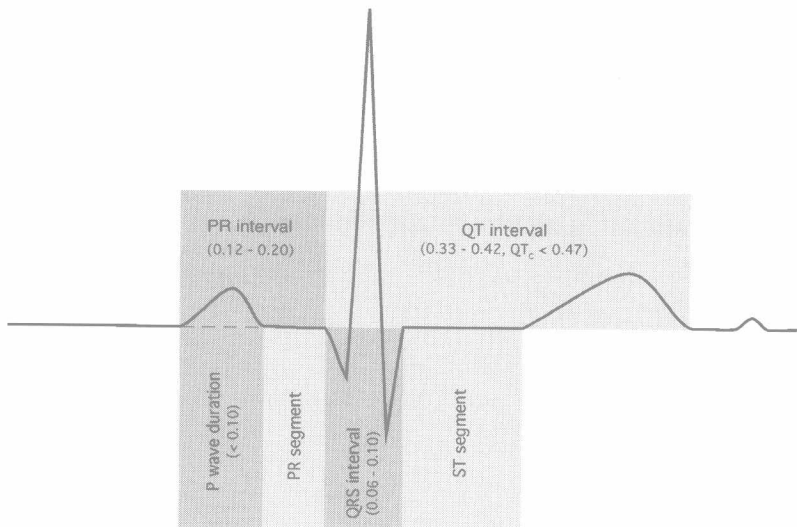


FIGURE 1-3. ECG intervals.

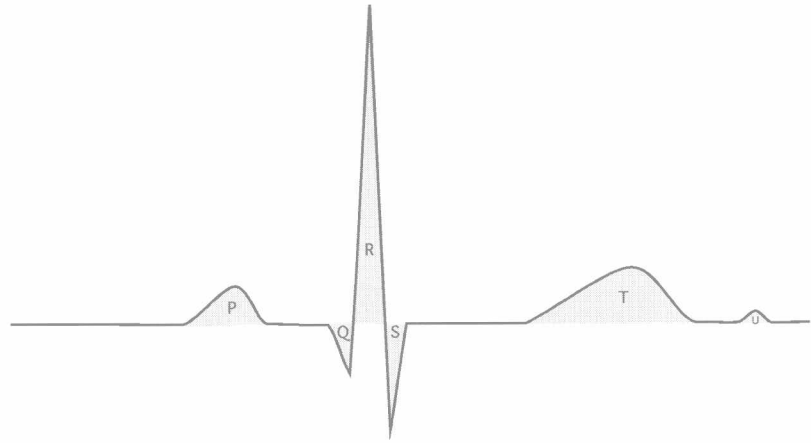


FIGURE 1-4. ECG wave morphology.

- R_{V_5} or $R_{V_6} > 26$ mm
- $R_I + S_{III} > 25$ mm
- $R + S$ in V lead > 45 mm
- $S_{V_1} + R_{V_5}$ or $R_{V_6} > 35$ mm
- *Clues for RVH:*
 - $R_{V_1} > 7$ mm
 - $S_{V_1} < 2$ mm
 - R/S ratio in $V_1 > 1$
 - RAD of 110° or more
- b. *Atrial hypertrophy:*
 - Right atrial hypertrophy: tall or peaked p waves in limb or precordial leads
 - Left atrial hypertrophy: broad or notched p waves in limb leads
- c. *Ischemic changes:* There [are/are no] S-T wave [depressions/elevations] or [flattened/inverted] T waves. Presence of Q wave indicates an old infarct.
- d. *Bundle branch block:* There [is/is no] [left/right] bundle branch block. Clues:
 - Presence of RSR' wave in leads V_1 – V_3 with ST depression and T wave inversion goes with RBBB.
 - Presence of notched R wave in leads I, aVL, and V_4 – V_6 goes with LBBB.

Document Information in an Organized Manner

A complete medical student initial History and Physical is neat, legible, organized, and usually two to three pages long. Major topics should include: chief complaint, history of present illness, medical history, surgical history, medications, allergies, sexual history, smoking and alcohol history, occupation, travel, review of systems, vital signs, physical exam, lab results, test results, assessment or problem list, and plan.

HOW TO ORGANIZE YOUR LEARNING

The main advantage to doing the medical clerkship is that you get to see patients. The patient is the key to learning medicine, and the source of most satisfaction and frustration on the wards. Plan your learning before the rotation starts as follows:

Make a List of Core Material to Learn

This list should reflect common symptoms, illnesses, and areas in which you have particular interest, or in which you feel particularly weak. Do not try to learn every possible topic. The Committee of Directors in Internal Medicine (www.im.org/cdim/) publishes a list of core content, on which this book is based. The CDIM emphasizes:

Symptoms and Lab Tests

- Abdominal pain
- Altered mental status
- Anemia
- Back pain
- Chest pain
- Cough
- Dysuria
- Fluid, electrolyte, and acid–base disorders

Common Illnesses

- Chronic obstructive pulmonary disease (COPD)
- Congestive heart failure
- Depression
- Diabetes mellitus
- Dyslipidemia
- Human immunodeficiency virus (HIV) infection
- Hypertension
- Smoking cessation
- Substance abuse
- Common cancers

We Also Recommend

- Adult vaccinations
- Domestic violence
- Dysrhythmias
- Nutritional disorders

Select Your Study Material

We recommend:

- This review book, *First Aid for the Clinical Clerkship in Medicine*
- A major medicine textbook such as *Harrison's Principles of Internal Medicine* (costs about \$140)
- A full-text online journal database, such as www.mdconsult.com (subscription is \$99/year for students)