

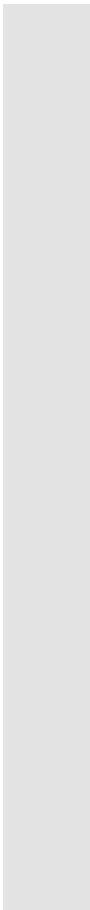
# Clinical Year: Being on the Other Side

Paul Gonzales, MPAS, PA-C  
Clinical Coordinator, Assistant Professor  
Touro University California  
May 21, 2023



## Disclosure

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- I am the sole author of the PA Rotation Exam Review book (published 2018)
  - I publish under Wolters Kluwer, the Health division of Lippincott & Williams & Wilkins (LWW), and will note where their products are recommended in this presentation
  - The information provided is through the lens of a current faculty member and former PA student, recognizing the methods that work (and don't work) for students of all calibers, including those who require remediation
- 

# Objectives

- Identify and describe various study resources and study methods that are beneficial for the PA student.
- Explain time management approaches and ways to commit large volumes of information to memory.
- Dissect components of specific and general objectives from the clinical year.
- Discover ways to approach various types of questions and identify what a question is asking.
- Create a study plan for future clinical rotations using objectives.



Study approach is as important as the resources that you utilize



Individualized based on your learning style



Clinical year is more about self-directed learning

Identify and describe various study resources and study methods that are beneficial for the PA student.



Learning  
Styles

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Visual

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Aural

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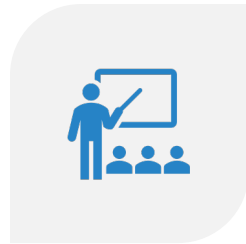
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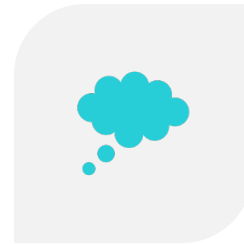
Kinesthetic



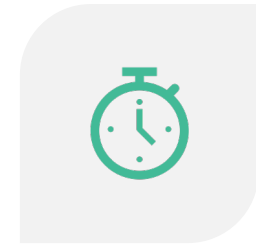
# Learning Approach



STRATEGIES  
AND  
CONDITIONS  
WORKED BEST

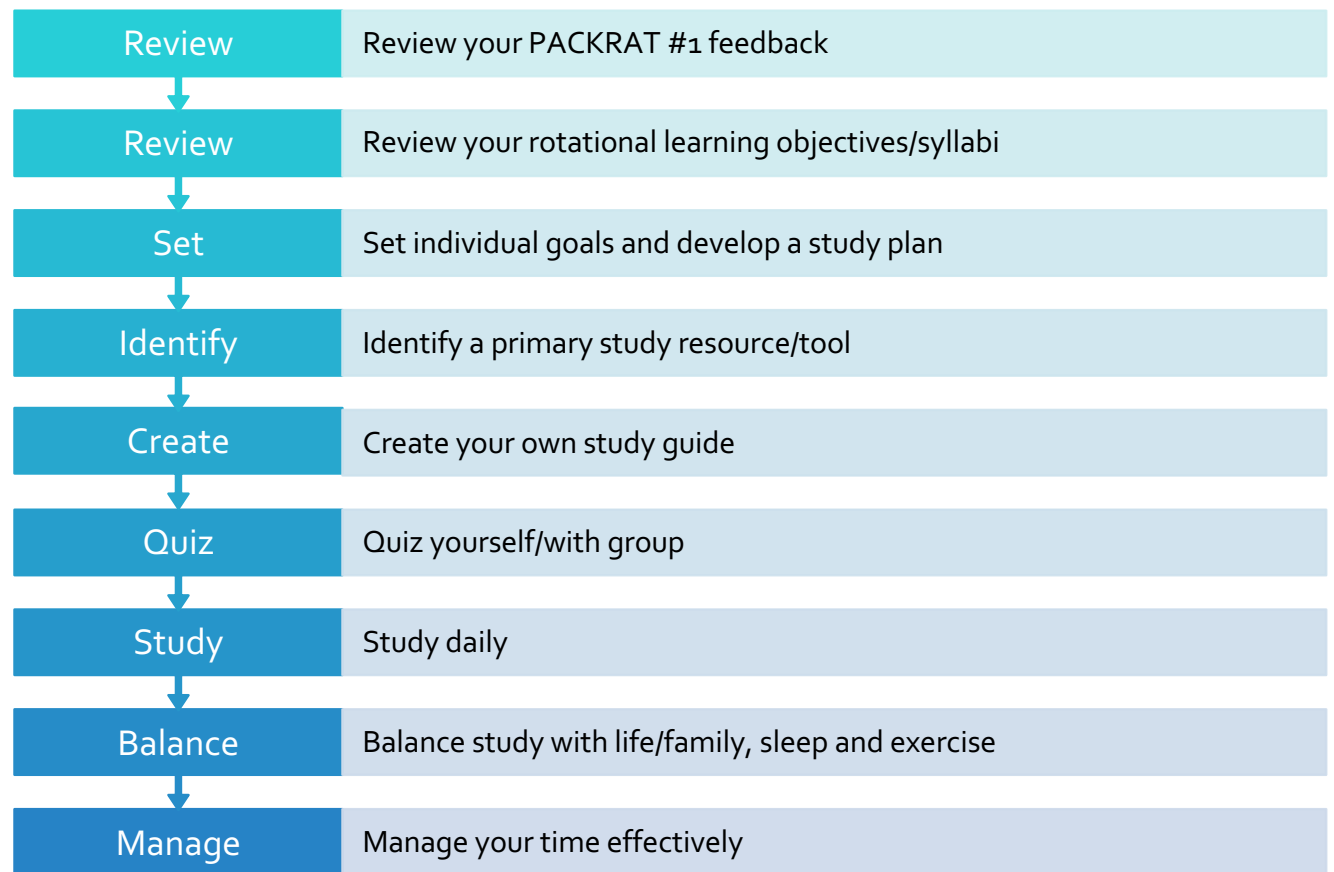


STRATEGIES  
AND  
CONDITIONS  
THAT DID NOT  
WORK WELL  
FOR YOU



STRATEGIES  
**TOO TIME  
CONSUMING**  
TO  
CONTINUE

# Process



# Approach

Take practice tests regularly

Take questions at random

Create your own vignettes

Practice differentials for various chief complaints

Chunking

Learn as you go

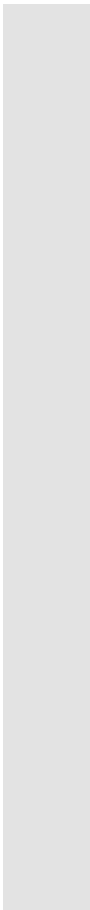
Learning techniques





## How to Study

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- For each topic: etiology (pathogens), epidemiology, risk factors, presentation, diagnostics (labs and imaging), treatment (side effects, monitoring, next steps, follow up), and health maintenance (vaccines, screenings)
  - Quizzing yourself e.g. Strep Pharyngitis
    - What are the Centor criteria?
    - What is the presentation? How can I differentiate from other diagnoses?
    - Write whatever you can remember. Whatever you don't get, quiz yourself again in a few days or following week.
  - **Application** is crucial in clinical year
- 



Question banks



Osmosis, Aquifer,  
Picmonic, etc.



Review books



Podcasts and  
Phone Apps

## Supplemental Resources

## Ask the Audience

- What resources have **you** found to be useful in didactic or clinical phase?

# Selecting Study Resources

Don't choose too many

Don't choose PANCE review books

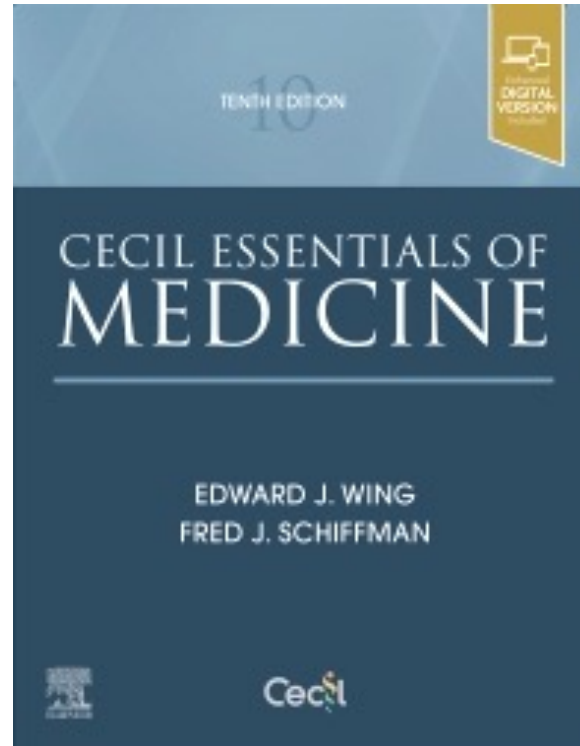
Don't rely on question banks

I recommend:

Sanford guide

UpToDate, Cecil Essentials of Medicine

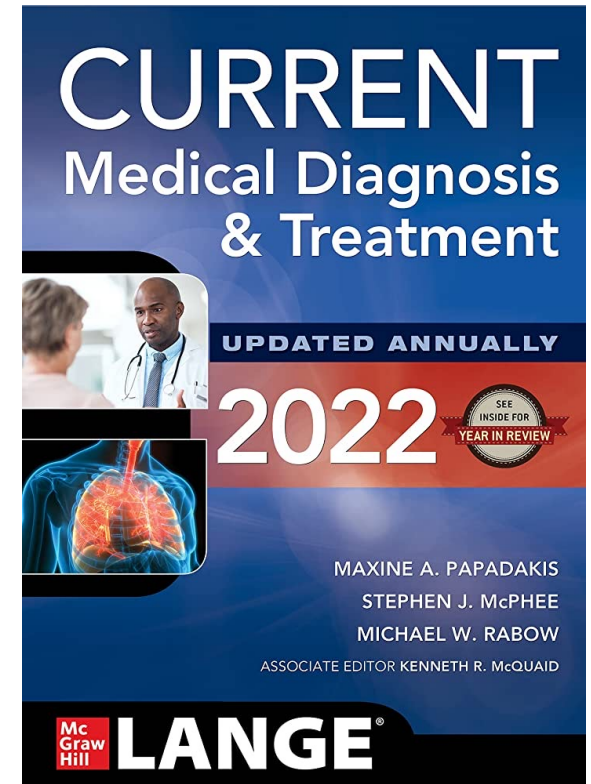
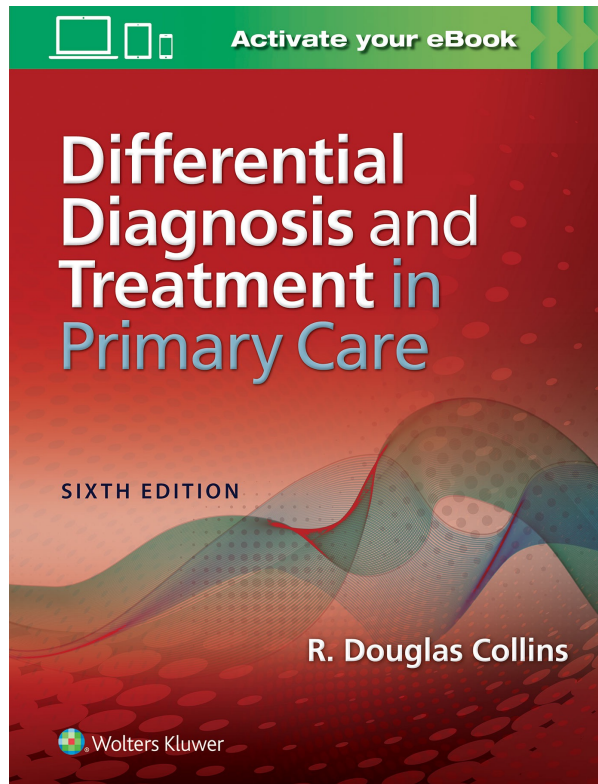
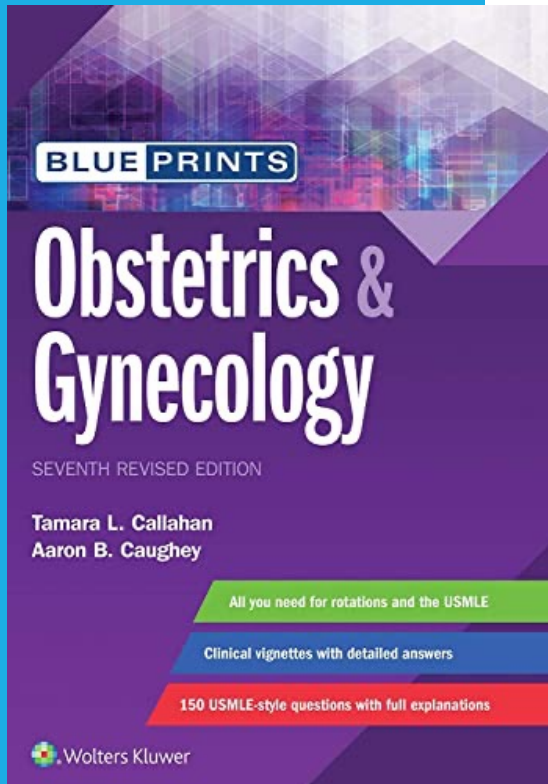
Didactic notes



UpToDate®

**SANFORD GUIDE**

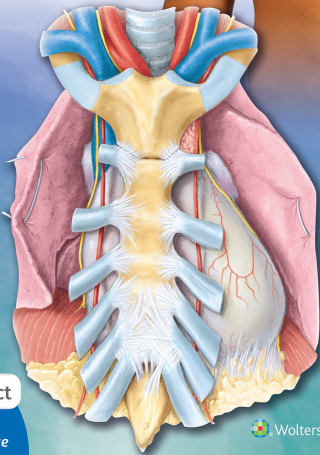




# MOORE'S Clinically Oriented Anatomy

NINTH EDITION

ARTHUR F. DALLEY  
ANNE M. R. AGUR



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## SURGICAL RECALL

Lorne H. Blackbourne

### MALIGNANT HYPERTHERMIA (MH)

What is it?

A life-threatening condition that occurs during general anesthesia, characterized by a rapid increase in body temperature, muscle rigidity, and hyperkalemia. It is caused by a genetic defect in the ryanodine receptor (RYR1) gene, which is located on chromosome 19. The condition is most commonly associated with the use of volatile anesthetics and succinylcholine.

Very rare

What is the incidence?  
What are the causative agents?  
What are the signs/symptoms?

Increased body temperature, hyperkalemia, tachycardia, tachypnea, ↑ P<sub>CO2</sub>, ↑ end-tidal CO<sub>2</sub>

What is the earliest sign of MH?

What is the treatment?

Rising end-tidal CO<sub>2</sub>,  
↑V desaturation, body cooling, discontinue use of volatile anesthetics

### MISCELLANEOUS

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See inside to the  
digital learning experience

See inside to the  
digital learning experience

Neostigmine

Time: endogenous blood pressure  
decreases in this etc.



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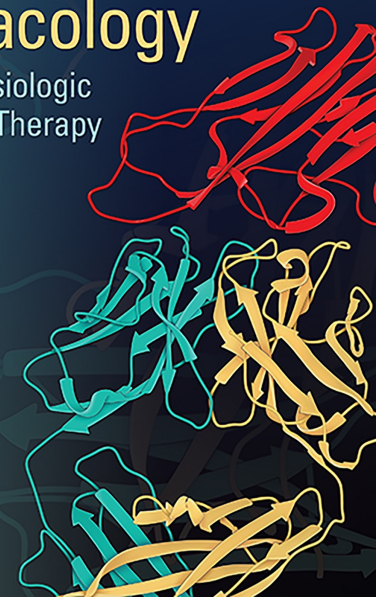
# Principles of Pharmacology

The Pathophysiologic  
Basis of Drug Therapy

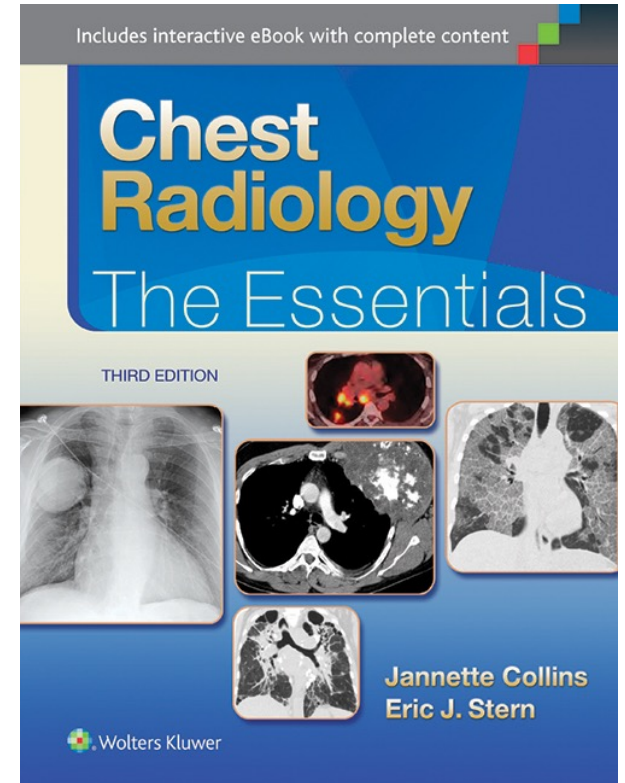
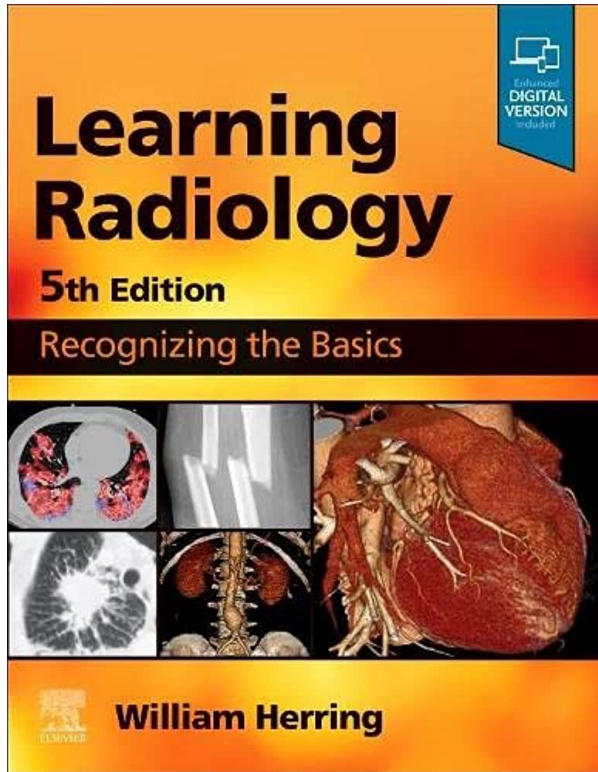
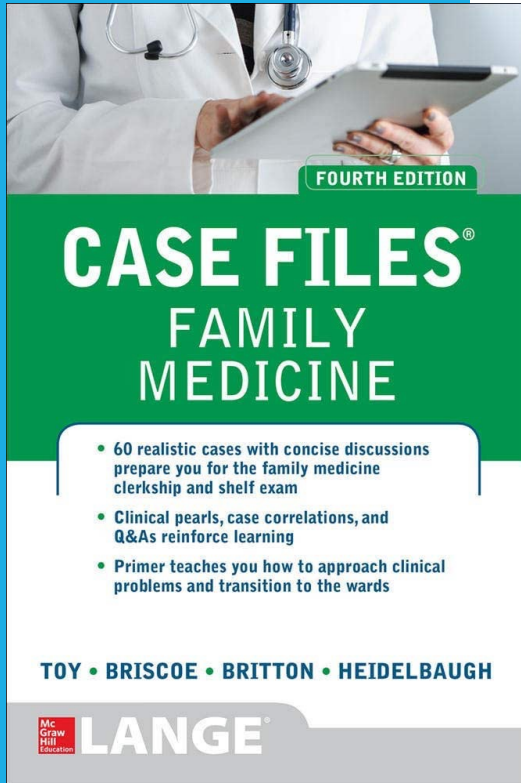
David E. Golan  
Ehrin J. Armstrong  
April W. Armstrong

FOURTH EDITION

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TO

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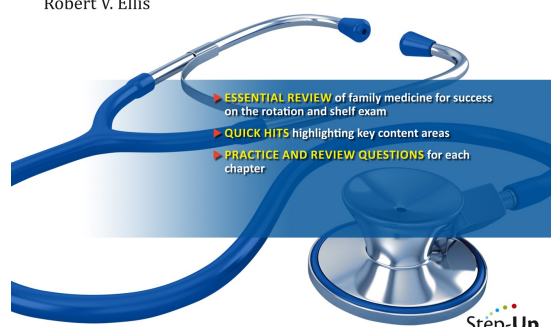


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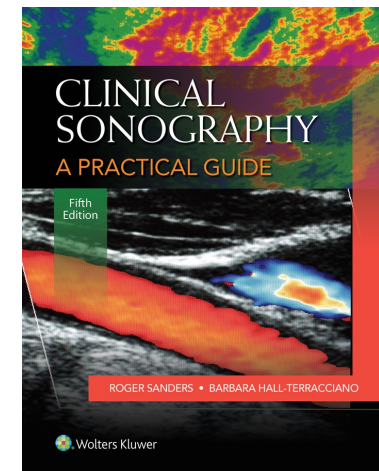
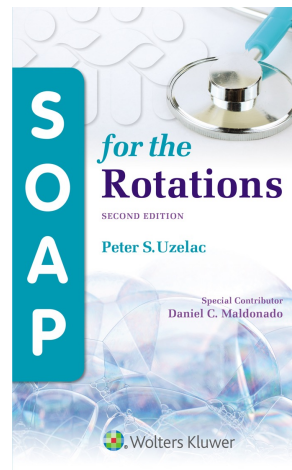
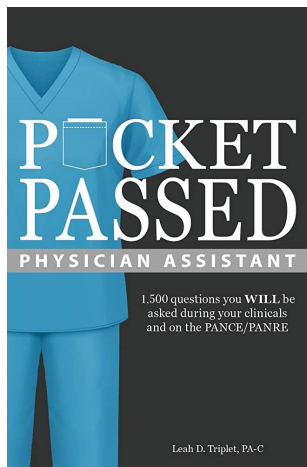
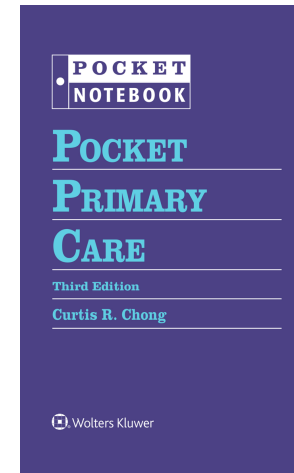
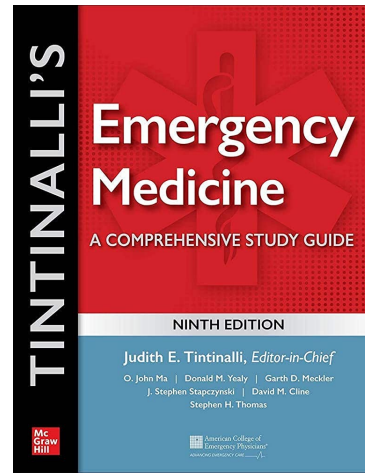
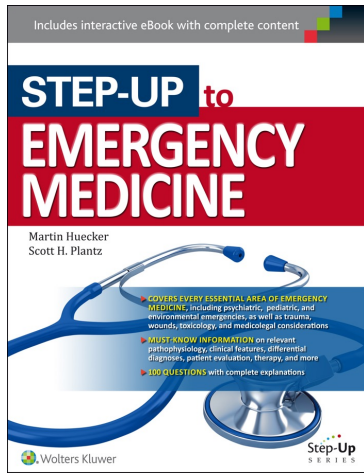
# STEP-UP to FAMILY MEDICINE

Robert V. Ellis

- ▶ **ESSENTIAL REVIEW** of family medicine for success on the rotation and shelf exam
- ▶ **QUICK HITS** highlighting key content areas
- ▶ **PRACTICE AND REVIEW QUESTIONS** for each chapter



Wolters Kluwer Step-Up SERIES



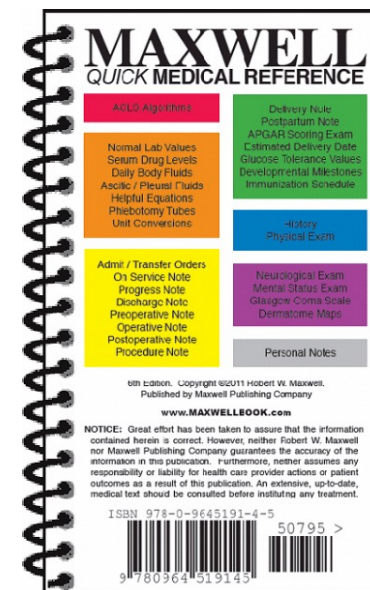


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**picmonic**  
Remember More in Less Time

**smarty** **PANCE**  
PANRE & ROTATION EXAMS

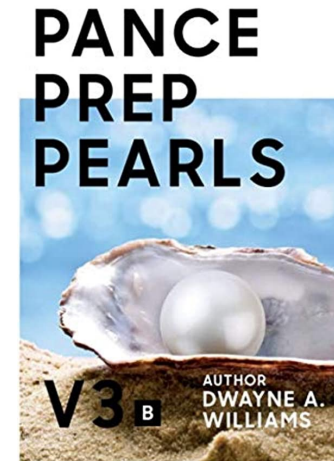
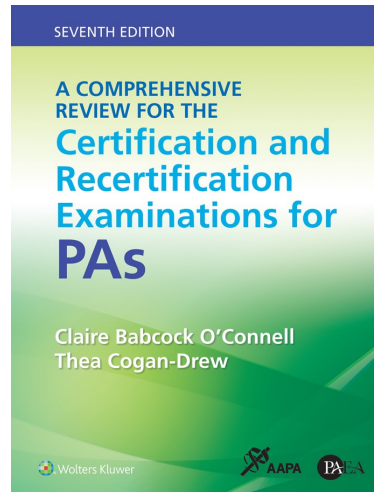
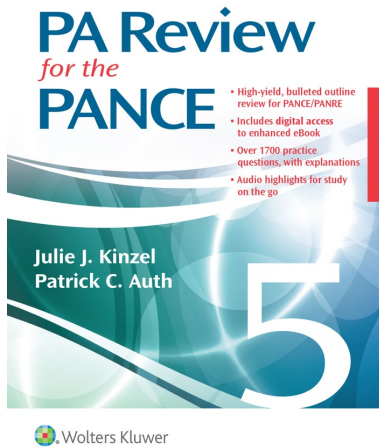
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# PANCE/Board Review

Every program must prepare students for the board exam (PANCE)

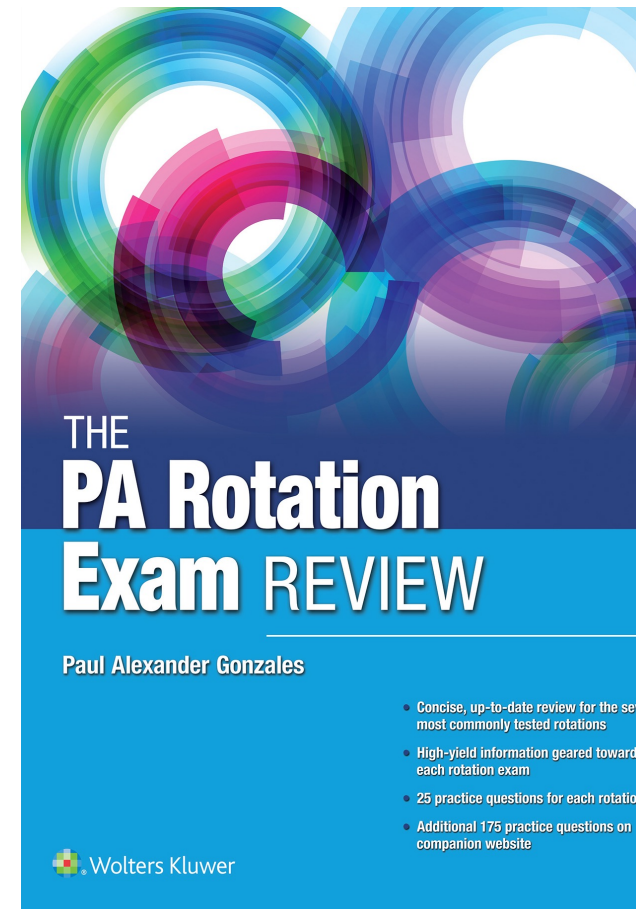
Your clinical year is not the time to begin preparing for your board exam

Your focus should be continuing to build on your foundation of medicine



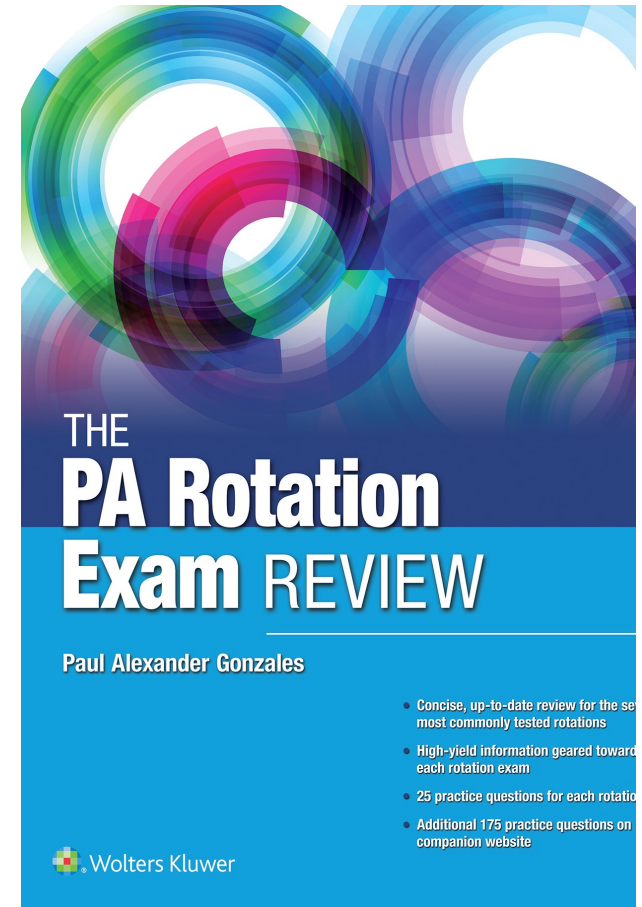
# Clinical Phase

- Typically 7 Core Rotations
  - Emergency Med
  - Family Med
  - Internal Med
  - Pediatrics
  - Psychiatry
  - Surgery
  - Women's Health/Ob/Gyn
- 1-2 Electives
- Duration: 4-8 weeks each



# Clinical Phase

- Covers the 7 Core Rotations
  - Emergency Med
  - Family Med
  - Internal Med
  - Pediatrics
  - Psychiatry
  - Surgery
  - Women's Health/Ob/Gyn
- 25 practice questions/chapter + 175 additional online
- 2<sup>nd</sup> edition set to be available May 2024
  - More practice Qs
  - More pharmacology
  - More pictures
  - Content update



Disease	Etiology, Prevalence, Risk Factors	Clinical Symptoms and Signs	Diagnostics	Therapy, Prognosis, and Health Maintenance
Dilated cardiomyopathy (DCM)	<ul style="list-style-type: none"> <li>• <b>Most common type</b> (95%) and associated with reduced strength of ventricular contraction, resulting in dilation of left ventricle</li> <li>• Most <b>idiopathic</b> (50%), age 20-60 y</li> <li>• <b>CAD with prior MI</b> is common cause</li> <li>• <b>Genetic abnormalities</b> <ul style="list-style-type: none"> <li>• Excessive ETOH</li> <li>• Postpartum</li> <li>• Doxorubicin</li> <li>• Endocrinopathy</li> <li>• Myocarditis</li> </ul> </li> </ul>	<ol style="list-style-type: none"> <li>1. <b>Dyspnea</b> (MC)</li> <li>2. Fatigue</li> <li>3. SX of L and R-HF</li> </ol> <p><u>Signs:</u></p> <ol style="list-style-type: none"> <li>1. <b>S3 gallop</b></li> <li>2. Pulmonary crackles (rales)</li> <li>3. Increased JVP</li> </ol> <p><u>Complications:</u></p> <ul style="list-style-type: none"> <li>• Arrhythmias</li> <li>• Sudden death</li> <li>• Embolic events (10%)</li> </ul>	<ol style="list-style-type: none"> <li>1. EKG: nonspecific ST and T wave changes, conduction abnormalities, ventricular ectopy</li> <li>2. CXR: <b>cardiomegaly</b>, pulmonary congestion</li> <li>3. Echo: <ul style="list-style-type: none"> <li>• <b>LV dilation</b> and dysfunction</li> <li>• High diastolic pressures</li> <li>• Low cardiac output</li> <li>• <b>Decreased ejection fraction</b></li> <li>• <b>Regional or global LV hypokinesis</b></li> </ul> </li> </ol>	<ol style="list-style-type: none"> <li>1. CHF supportive therapy <ul style="list-style-type: none"> <li>• ACE inhibitor</li> <li>• Diuretics</li> <li>• <math>\beta</math> blockers</li> <li>• Na restriction</li> </ul> </li> <li>2. Digoxin, vasodilators</li> <li>3. ICD if EF &lt;30%-35%</li> <li>4. Cardiac transplant</li> <li>5. Poor prognosis—most die within 5 y</li> </ol> <p><u>Health Maintenance:</u></p> <ol style="list-style-type: none"> <li>1. <b>Abstinence from ETOH</b></li> </ol>

### Hypertrophic Cardiomyopathy

Massive hypertrophy (of the septum), small left ventricle, systolic anterior mitral motion, and diastolic dysfunction.

- Conditions, positions, and maneuvers that reduce LVED (decreased preload and afterload) worsen the outflow obstruction, intensifying the murmur

- Valsalva—decreases preload
- Moving from squatting to standing, nitrates—decreases preload
- Vasodilators—decrease afterload

Disease	Etiology, Prevalence, Risk Factors	Clinical Symptoms and Signs	Diagnostics	Therapy, Prognosis, and Health Maintenance
Hypertrophic cardiomyopathy (HCM) (Fig. 15-3)	<p>Asian descent, elderly (distinct form)</p> <p>Most: <b>autosomal dominant trait</b></p> <p>Stiff, hypertrophied ventricle with elevated diastolic filling pres-</p>	<ol style="list-style-type: none"> <li>1. <b>Dyspnea</b> (90%)</li> <li>2. <b>Angina pectoris</b> (75%)</li> <li>3. Syncope and arrhythmias common <ul style="list-style-type: none"> <li>• Palpitations, dizziness</li> </ul> </li> <li>4. Sudden cardiac death (&lt;30, 2 %-3%)</li> </ol> <p><u>Signs:</u></p>	<ol style="list-style-type: none"> <li>1. CXR: unremarkable</li> <li>2. EKG: nonspecific ST and T wave changes, septal Q waves, <b>LVH</b></li> <li>3. <b>Echo</b> <ul style="list-style-type: none"> <li>• Asymmetric septal hypertrophy (&gt;15 mm)</li> <li>• Systolic anterior</li> </ul> </li> </ol>	<ol style="list-style-type: none"> <li>1. <b>Beta blockers (first line)</b> or CCB; disopyramide for negative inotropic effects <ul style="list-style-type: none"> <li>• Increases ventricular diastolic filling time</li> <li>• <b>Caution:</b> use of digoxin (increases contractility), nitrates, &amp; diuretics</li> </ul> </li> </ol>



Explain time management approaches and ways to commit large volumes of information to memory.

- What are **your** preferred time management skills?
- How do **you** commit information to memory?

Explain time management approaches and ways to commit large volumes of information to memory.

Get rid of distractions

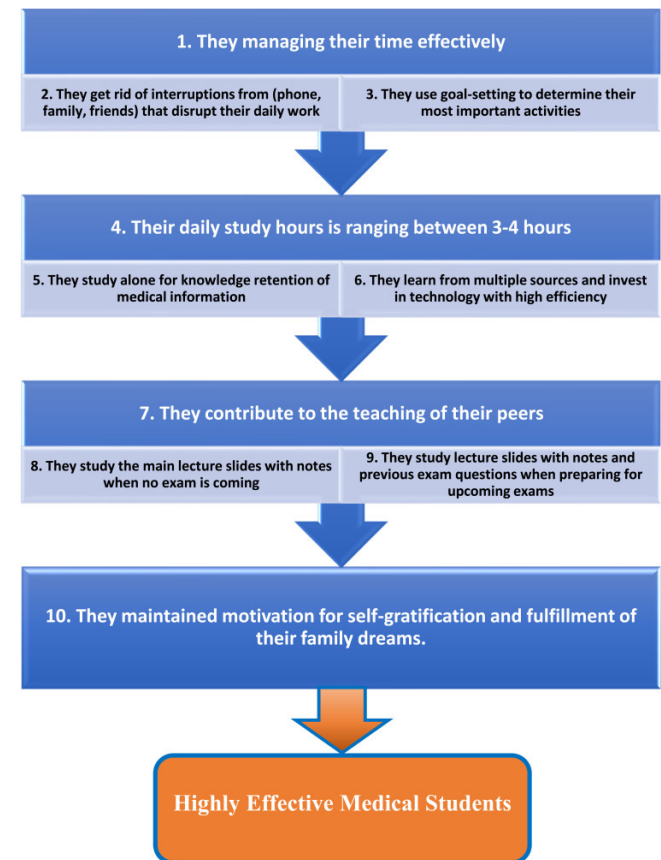
Change your study environment

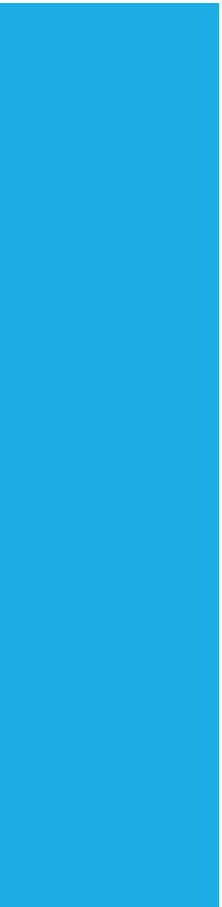
Set goals and adapt

Be creative with scheduling

Be upfront with your family/friends


Clinicals are temporary, but meant to prepare you





Explain time management approaches and ways to commit large volumes of information to memory.

---

- Spaced repetition
    - Involves actively recalling learned material
    - If item forgotten, you have identified weak areas to focus on in the future
  - Flashcards
    - Box Method
    - Spaced Repetition Software (Anki, Memorang)
      - Word definition
      - Reverse word definition
      - FITB
      - Images
  - Start preparing early
  - Study as permitted (during commute, breaks, etc.)
- 

Dissect  
components  
of specific and  
general  
objectives  
from the  
clinical year.

- Take your objectives
- Create a study plan for yourself
- Adapt it as you go
- Adhere to it as best you can
- Align it with realistic, attainable goals

Dissect  
components  
of specific and  
general  
objectives  
from the  
clinical year.

- Specific Objectives: Oral Candidiasis (Thrush)
- General Objectives: Fatigue, Chest Pain, Vaginitis
  - Fatigue
    - Psych: depression
    - Heme: anemia (IDA, Vit B12/Folate)
    - Endo: hypoglycemia, DKA, hypothyroidism, etc.
    - Cardiac: HF, symptomatic arrhythmia, etc.
    - Respiratory: COPD
    - Neuro: OSA
    - Rheum: SLE
    - Infectious disease: TB, malignancy, Lyme, EBV, etc.

### **PC 1/2/3 CORE LEARNING OBJECTIVES**

Upon completion of this clinical experience (PC1, PC2, or PC3), the student will be able to:

- **Understand etiology, epidemiology, risk factors and pathophysiology**
- **Evaluate clinical manifestations**
- **Formulate a differential diagnosis**
- **Develop an assessment (including recommendation and interpretation of laboratory, diagnostic and radiological studies/findings)**
- **Construct a patient-specific plan (including pharmacological/ non-pharmacological, patient education, procedural and necessary referrals)**
- **Describe prognosis, complications, prevention, patient education, and treatment goals**

of the following diseases/disorders/symptoms:

#### **General**

- Health promotion/disease prevention (IZ and health screening tests/schedules)
- Smiles for Life online module objectives

#### **Symptoms**

- Altered level of consciousness
- Chest Pain
- Edema
- Fatigue
- Fever
- Syncope
- Vertigo
- Weakness
- Weight loss

#### **Cardiovascular**

- Conductive disorders- atrial fibrillation/flutter, atrioventricular blocks, bundle branch block, paroxysmal supraventricular tachycardia, premature beats, ventricular tachycardia, ventricular fibrillation
- Hypertension- pre/stage 1/stage 2, essential, secondary
- Ischemic heart disease- CAD, acute myocardial infarction, angina pectoris (stable, unstable, Prinzmetal's/variant)
- Valvular disease- Stenosis, insufficiency/regurgitation of: Aortic, Mitral, Tricuspid, Pulmonic
- Mitral Valve Prolapse
- Lipid disorder- hypercholesterolemia, hypertriglyceridemia



Create a study plan for future clinical rotations using objectives.

- Take sample objectives provided.
- Discuss ways to approach them.
- Utilize the methods we discussed today to create your own study plan.



Discover ways to approach various types of questions and identify what a question is asking.

- Read the “lead-in” (question being asked)
- Read the stem (vignette) of the question
- Try to answer the question without looking at the answer choices
- Optional: Look at the answer choices, cross out ones you know are incorrect based on the info given (“distractors”)
- Pull out important information (RF, signs/symptoms, ab/normal vitals)
- Select answer, go with your gut
- Avoid changing your answer
- Avoid adding content that isn’t there

## Practice Question

- Stem: A 72-year-old man presents for painless vision loss. He describes his vision as hazy. The problem started two years ago when he had to get new reading glasses, but it continues to worsen. He admits difficulty driving at night because his vision is fuzzy. On exam, the red reflex is diminished and visual acuity is 20/50 on the right, 20/70 on the left.
- Lead-in: What is the most likely diagnosis?
  - a. Nuclear cataract
  - b. Retinal detachment
  - c. Age-related macular degeneration (ARMD)
  - d. Open angle glaucoma

## Recall What You DO Know

### A. Nuclear cataract

1. RF: smoking (2x), EtOH, sunlight exposure, DM, metabolic syndrome
2. Age 60+, Painless, progressive, blurry vision; bilat or unilat; diff driving at night, reading road signs or fine print; opacified lens on exam; darkening of red reflex, obscured ocular fundus

### B. Retinal detachment

1. Acute, painless vision loss (peripheral to central); “curtain coming down”, floaters, blurred/black vision (over hrs)

### C. Age-related macular degeneration (ARMD)

1. RF: long hx smoking, metabolic synd, white, female, age 50+
2. Insidious onset, gradual loss of vision; retinal drusen may precede; scotomas, distorted vision → loss of central vision

### D. Open angle glaucoma

1. Acute, severe eye PAIN + nausea/vomiting, frontal HA, tearing, blurry vision w/ dec visual acuity
2. PE: Cloudy or hazy cornea, mid-dilated and non-reactive pupil

## Highlight Key Info & Remove Distractors

- Stem: A 72-year-old man presents for **painless** vision loss. He describes his vision as hazy. The problem **started two years ago** when he had to get new reading glasses, but it continues to worsen. He admits **difficulty driving at night** because his vision is fuzzy. On exam, the **red reflex is diminished** and visual acuity is 20/50 on the right, 20/70 on the left.
- Lead-in: What is the most likely diagnosis?
  - a. Nuclear cataract
  - ~~b. Retinal detachment (not acute, not periph to central)~~
  - c. Age-related macular degeneration (ARMD)
  - ~~d. Open angle glaucoma (not severely painful, not acute)~~

## Selecting the Best Answer

- Stem: A 72-year-old man presents for painless vision loss. He describes his vision as hazy. The problem started two years ago when he had to get new reading glasses, but it continues to worsen. He admits difficulty driving at night because his vision is fuzzy. On exam, the red reflex is diminished and visual acuity is 20/50 on the right, 20/70 on the left.
- Lead-in: What is the most likely diagnosis?
  - a. Nuclear cataract**
  - ~~b. Retinal detachment~~
  - ~~c. Age-related macular degeneration (ARMD) (no RF, no drusen on exam)~~
  - ~~d. Open angle glaucoma~~

## Types of Questions

- Most likely diagnosis
- Confirmatory (gold standard) diagnostic test
- Initial diagnostic test
- Treatment
- Side effect of therapeutic option
- Complication of disease

## Let's Practice!

- Work in small groups of 3-4 to answer 3 questions together
- Utilize the method we learned to select the best answer
- You have 5 minutes to complete this
- Raise your hand when you're finished

## Pitfalls of Clinical Year

- Assumptions about 'seeing' a disease vs studying it
- Only reviewing question banks
- Not developing a study plan or following it
- Not utilizing correct objectives
- Assuming your prior experience will carry you through
- Did well in didactic, don't need to study it again
- Procrastinating, cramming
- Not taking care of your: sleep, mental health, diet, etc.
- Utilizing board review books as a primary source



## Why Is This Important?

- Stay current with ever-changing medicine
- Ensure patient safety, quality of care, community health
- Learn the difference between clinical medicine (art) and evidence based medicine (science)
- You will be tested on EBM

# The Other Stuff

- Routine, dress code, arrival time & departure time
  - Rounding, call
- First impressions & lasting impressions
- Elicit and act on feedback (time & process)
- Maximize your clinical experience
- Define student and preceptor expectations
- Be flexible
- Familiarize yourself with P&P, office protocol
- Repetition helps with mastery

# The Other Stuff

- Evaluations – who, what, when, where, how
- Respect your place in the HC system and in patient care
- Respect the privilege of practicing medicine
- Log your pt encounters daily, write down common ICD-10 codes
- Don't believe everything you hear; open mind, ready to learn!
- Preceptors – no one is alike
- Non-clinical things, too
- Clinical year: a different type of “difficult”
- Who will be your clinical references?



What Did You Learn Today?

# Questions?

Thank You!

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