FCM 813C

Family & Community Medicine Clerkship

Syllabus

2017-2018

Table of Contents

"Click" on the title to instantly go to each topic

Common Problems and Prevention topics

ABDOMINAL PAIN and DIARRHEA

Learning Objectives

At the end of the case discussion the student should be able to:

1. Differentiate, by sex, age group and body system, the diagnoses of abdominal pain which are:
   a. most likely or common (whether "serious" or not)
   b. most serious, or "high pay-off", i.e., early detection and therapy will markedly improve an otherwise serious prognosis.

2. Cite the percentage of abdominal pain complaints in primary care which subside without a definitive diagnosis being reached.

3. Triage, by means of history and physical examination, patients that may have an acute "surgical" abdomen.

4. Define diarrhea.

5. Differentiate chronic from acute diarrhea.

6. List symptoms that help differentiate acute viral from bacterial diarrhea.

7. Discuss rehydration in the treatment of dehydration due to acute diarrhea.

8. Compare and contrast the characteristics of inflammatory (caused by invasive organisms that disrupt the mucosal lining) vs. non-inflammatory diarrhea (caused by organisms that stimulate excessive intestinal secretions.)

9. Name the most common organism causing traveler's diarrhea and the treatment.

11. Understand the evidence behind the use of probiotics and the treatment/prevention of antibiotic-induced diarrhea.

Recommended Readings

1. Differential diagnosis of acute abdominal pain by location. In: Wagner DK. Approaches to the patient with acute abdominal pain. Current Topics 1:3. 1978. Chart.

2. Leung A. Acute abdominal pain in children. Am Fam Phys 2003 Jun1;67(11):2321-2327. http://www.aafp.org/afp/990401ap/1823.html.

3. Wilkins W. et al. Diagnosis and Management of Upper Gastrointestinal Bleeding. Am Fam Phys. 2012 Mar 1:85(5):469- 76. http://www.aafp.org/afp/2012/0301/p469.html

4. Thielman NM, Guerrant RL. Acute Infectious Diarrhea. NEJM 2004 350 38-47. http://www.e-patsient.ee/infektsioonikontrolliteenistus/doc/oppematerjalid/Taisk_NEJM_350(1).pdf

5. Canavan, Amy et al. Diagnosis and Management of Dehydration in Children. Am Fam Phys. 2009 Oct 1:80(7):692-696. http://www.aafp.org/afp/2009/1001/p692.html

6. Armstrong, Carrie. AAP Reports on Use of Probiotics and Prebiotics in Children. Am Fam Phys 2012 Apr 1; 83(7);849-852. http://www.aafp.org/afp/2011/0401/p849.html

Supplemental Readings/Websites

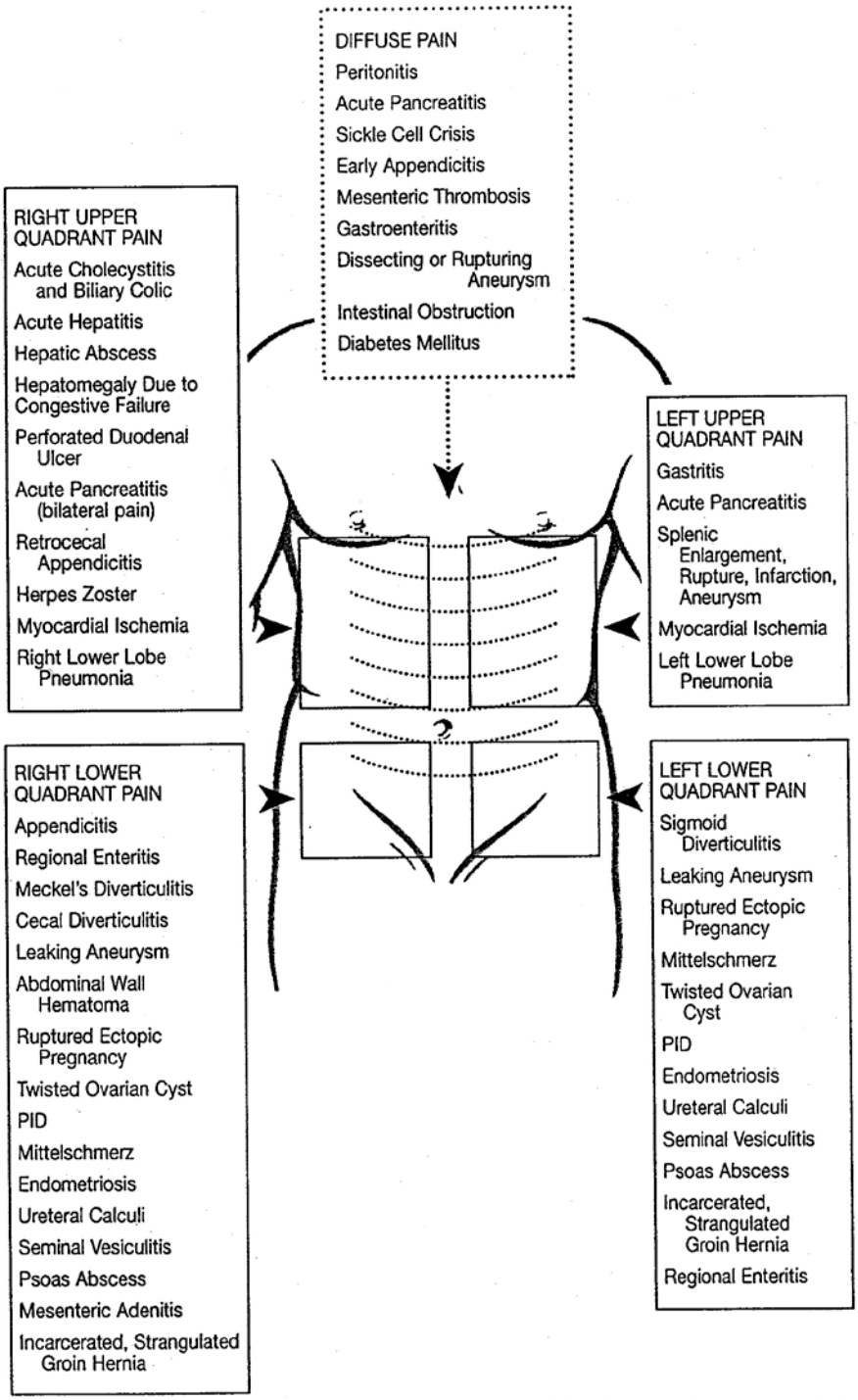
1. Silen, William. Cope's Early Diagnosis of the Acute Abdomen, 22nd ed. New York:Oxford University Press, USA 2010

2. Lyon Corey, Clark Dwayne. Diagnosis of Acute Abdominal Pain in Older Patients. American Family Physician 2006; 74(9) 1537-1544. November 1.

3. Weydert Joy A, Ball TM, David MF. Systematic review of treatments for recurrent abdominal pain (pediatric). Pediatrics 2003;111(1) e1-11. January.

4. http://www.cdc.gov/travel/diarrhea.htm

Differential Diagnosis of Acute Abdominal Pain by Location



Wagner DK: Approaches to the patient with acute abdominal pain. *Current Topics* 1:3, 1978.

TI 9732 Mar. 1996 Printed in U.S.A

BACK PAIN

Learning Objectives

At the end of the case discussion the students should be able to:

1. Distinguish, by history and physical examination, low back pain secondary to systemic disease from back pain due to regional musculoskeletal origins, utilizing age, sex, and occupational risk criteria in their clinical reasoning.
2. Distinguish typical symptoms and signs of complicated (disc/nerve root involvement) from those typical of uncomplicated (muscular/mechanical) low back pain.

3. Differentiate the diagnoses of back pain that are:
   a. most common or likely
   b. most serious/ high pay off
4. Formulate appropriate plan of management of patients with low back pain which incorporates an awareness of the patient's occupation, home situation, and minimal use of pharmacologic agents.

5. Integrate the role of exercise, physical therapy, weight loss, and other modalities into the management of the acute and chronic back pain patient.

6. Discuss the rationale for “clinical practice guideline” by agencies such as the Agency for Healthcare Research and Quality (AHRQ), and apply these guidelines to the following cases:

   a) A 40-year-old man with 2 days of lumbar back pain after lifting his television set. He complains of pain in the right lower back area. He smokes but has no other significant history. On physical exam the only significant finding is a positive straight leg test on both right and left legs. What is the next step in this patient’s management?

   b) A 65-year-old woman with three months-worsening back pain in the lumbar area. She is obese but has lost 20 pounds without trying in the last month. She has not seen a doctor in several years because she has had no health care coverage. She recently qualified for Medicare. Her past medical history is significant for intermittent low back pain over the last 30 years. On physical exam she is an obese female with exquisite tenderness on palpation of the lumber spine. What is the next step in the management of this patient?

Recommended Readings

1. Pust R. Chart: Physical Examination of Low Back Pain Patients Sequenced by "4S" Positions.

2. Hoppenfield S. Physical examination of the spine and extremities. Appleton & Lange, 1976. Figures 30, 31, 32.

3. Pust R. Back Exam: The systematic 4-S Method. College of Medicine 2016 (file is on your FCM flash drive)

4. Casazza, B. Diagnosis and Treatment of Acute Low Back Pain. AmFamPys. 2012 Feb 15; 84(4): 343-350. http://www.aafp.org/afp/2012/0215/p343.pdf

5. Last Allen R., et al. Chronic Low Back Pain: Evaluation and Management. Am Fam Phys 2009; 79:1067-1074. http://www.vertebrologi.ru/biblio/chronic_back.pdf

6. Carey TS and Freburger, JK Exercise and the Prevention of Low Back Pain: Ready for Implementation JAMA intern Med. 2016; 176(2): pp.208-209 http://archinte.jamanetwork.com/article.aspx?articleid=2481155

Supplemental Readings/Websites

1. Schonstein E. Kenny D. Keating J. Koes B. Herbert RD. Physical conditioning programs for workers with back and neck pain: a Cochrane systematic review. Spine. 28(19):E391-5, 2003 Oct 1.

Physical Examination of Low Back Pain Patients
Sequenced by "4S" Positions

R. Pust, M.D.

STAND

a. Inspect:

Lordosis (excess, normal, decreased); pelvic tilt; kyphosis (osteoporosis?); scoliosis

Range of motion: Forward (recheck for thoracic scoliosis); backward; side-bending

b. Palpate:

Paraspinous muscles (spasm?); spinous processes and interspaces (localized tenderness)

Iliac crest (bilateral pelvic compression) $\rightarrow$ S.I. joint (synovial) pain?

STEPS (walk)

a. Gait: symmetry? antalgic (i.e. pain-avoiding) limp

b. Heel-walking ($L_{4,5}$); toe walking (S_1)

SIT (on exam table)

a. "Sitting straight-leg raising (SLR) test" (should be similar to supine SLR if not malingering)

b. Strength of quads ($L_{3,4}$) and ankle plantar flexors (S_1); ankle and big toe dorsiflexors (L_5)

c. Size of calf: measure circumference 10 cm below tibial tubercle

d. Sensation (circle calf: L_3, L_4, L_5) (circle instep: L_4, L_5, S_1)

e. Reflexes: knee-jerk (L_4), ankle jerk (S_1); no 'pure' L_5 reflex

SUPINE

a. SLR with knee fully extended (180^o): Record the angle of hip flexion at which "sciatic" pain begins; if SLR causes any "sciatic" (?hamstring) pain, try Lesegue's test ("SLR" with knee at 160^o i.e., relaxed hamstrings, dorsiflex ankle): if pain only with ankle dorsiflexon, Lesegue's test is "positive" (i.e., likely true 'sciatica')

b. Hip R.O.M. and Thomas test (detects hip flexion deformity)

c. Measure (and compare) length of legs (p.r.n.) anterior superior iliac spine to tip of medial malleolus

---

Note: Details may be deleted or added (e.g. sphincter tone) depending on the history: acute/new onset, trauma history, and initial exam findings (e.g., S_1 -S_5 "saddle" sensory loss).

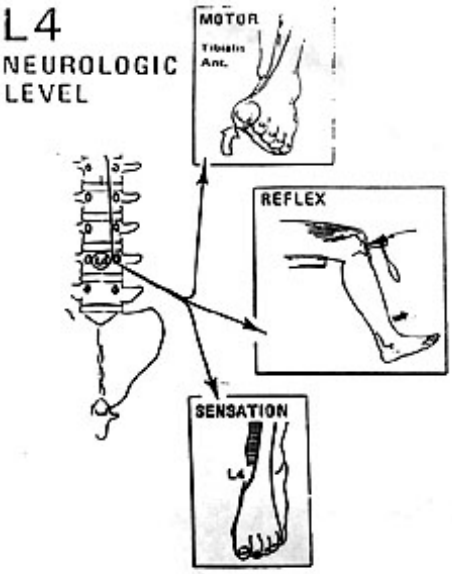


Fig. 30. Neurologic level L4.

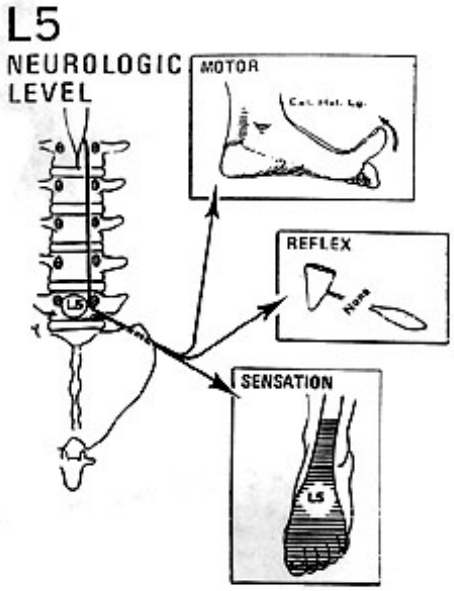


Fig. 31. Neurologic level L5.

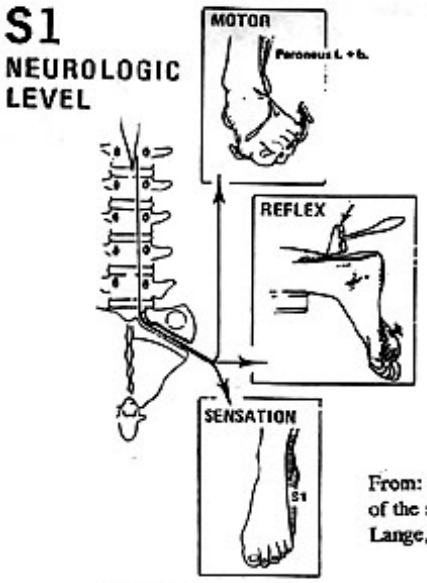


Fig. 32. Neurologic level S1.

From: Hoppenfield S. Physical examination of the spine and extremities. Appleton & Lange, 1976. p. 250-254 (excerpts)

CHEST PAIN

Learning Objectives

1. Name five organ systems as possible sources of chest pain and differentiate these by age and most likely versus high payoff diagnoses.

Table 3-1
SOME COMMON AND SOME SEVERE/LIFE THREATENING CAUSES OF CHEST PAIN IN CHILDREN AND IN ADULTS (R.Kutob 2002)

	Common Causes	SEVERE/LIFE THREATENING
Children	Costochonditis Anxiety	Pneumonia Pneumothorax
Adults	Pleurisy Herpes zoster Anxiety Peptic ulcer disease Esophagitis Costochonditis	Angina Myocardial infarction Pericarditis[2] Pulmonary embolism Pneumonia Pneumothorax Cholecystitis Pancreatitis
Elderly	Pleurisy Herpes zoster Peptic ulcer disease Esophagitis Costochonditis Anxiety	Angina Myocardial infarction Dissecting aortic aneurysm Pulmonary embolism Pneumonia Pneumothorax Cholecystitis Pancreatitis

2. List at least 10 *non-cardiac* causes for chest pain.

3. Realize that even though the work-up of chest pain is aimed at ruling out cardiac causes, the most common causes of chest pain in the primary care setting are not cardiac. List these:

4. List seven major risk factors (three “demographic” and four preventable) for cardiac disease.

5. Cite appropriate evaluation, medications, work up and treatment plan of a patient with suspected myocardial infarction.

6. Explain the importance of advanced directives and give examples of how to discuss these with patients and their families.

7. Describe the symptoms, diagnosis and treatment of costochondritis.

8. Describe risk factors, signs/symptoms, evaluation, diagnostic tools and treatment of PE

Recommended Readings

1. McConaghy, JR and Oza, RS. Outpaitent diagnosis of acute chest pain . Am Fam Phys; 2013 (87)3: 177-182. http://www.aafp.org/afp/2013/0201/p177.html

2. Campbell-Scherer D.L., Green LA, ACC/AHA guideline update for the management of ST-segment elevation myocardial infarction. Am Fam Phys (79)12,1080-1086, June 2009 http://www.aafp.org/afp/2009/0615/p1080.pdf

3. Proulx, AM and Zryd, TW. Costochondritis: Diagnosis and treatment Am Fam Phys (80)6, 617-620 Sept 2009 http://www.aafp.org/afp/2009/0915/p617.html

4. Konstantindes, S. Acute Pulmonary Embolism N Engl J Med (359)26 2904-2813 Dec 2008 http://www.nejm.org/doi/full/10.1056/NEJMcp0804570

5. Ebell, Mark. Evaluation of Chest Pain in Primary Care Patients. Am Fam Phys. 2011 Mar 1;83(5):603-605. http://www.aafp.org/afp/2011/0301/p603.html

6. Hauk, L. AHA Updates Guidelines on CVD Prevention in Women Am Fam Phys (85)1, 70-70 Jan 2012 http://www.aafp.org/afp/2012/0101/p70.html

Supplemental Readings/Websites

1. Diagnosis and treatment of chest pain and acute coronary syndrome (ACS) at guidelines.gov updated June 2012 http://www.guideline.gov/content.aspx?id=39320&search=diagnosis+and+treatment+of+chest+pain+and+acute

2. Lange RA, Hillis LD. Acute Pericarditis (review). NEJM 351(21):2195-202, 2004 November 18.

3. Laird C, Driscoll P, Wardrope J. The ABC of community emergency care: 3 chest pain. Emerg Med J 2004; 21:226-232.

COUGH, INCLUDING ASTHMA

Learning Objectives

At the end of the case discussion the student should be able to:

1. Differentiate acute cough from chronic cough.

2. Outline by age and respiratory tract site (upper vs. lower) the diagnoses of cough which are:
   a. Most likely or common.
   b. Severe/life threatening diagnoses, i.e., early detection and therapy will markedly improve an otherwise serious prognosis.

3. Identify the most common causes of chronic cough.

4. Discuss the symptomatic management of cough in patients with common diagnoses (as determined in objective 2a above).

5. List at least 4 common triggers of asthma exacerbations and potential measures to decrease these triggers.

6. Explain at least 5 assessment parameters that help to determine the severity of an asthma exacerbation.

7 . Compare the major types of pharmacologic agents and the sequence in which they are used to treat asthma and describe their mechanism of action and side effects.

8. Discuss the initial treatment of a patient presenting with an acute asthma exacerbation.

9. Summarize the importance of family involvement in a home asthma management plan.

.

Recommended Readings

1. Benich J. Evaluation of the Patient with Chronic Cough. Am Fam Physician. 2011 Oct 15;84(8):887-892. http://www.aafp.org/afp/2011/1015/p887.html

2. Summary of the National Asthma Education and Prevention Program Expert Panel Report 3, California Asthma Public Health Initiative (September 2008) https://www.ncbi.nlm.nih.gov/pubmed/17983880/%22=20

3. Elward KS, Pollart SM. Medical Therapy for Asthma: Updates from the NAEPP Guidelines. Am Fam Physician. 2010 Nov 15;82(10):1242-1251. http://www.aafp.org/afp/2010/1115/p1242.pdf

4. Benich J. Evaluation of the Patient with Chronic Cough. Am Fam Physician. 2011 Oct 15;84(8):887-892. http://www.aafp.org/afp/2011/1015/p887.html

Supplemental Readings/Websites

1. Valley Fever Center for Excellence, the University of Arizona
   http://www.vfce.arizona.edu
2. Coughlin L. Practice Guidelines. Cough: Diagnosis and Management. Am Fam Physician. 2007 Feb 15;75(4):567-575.

Cognitive Impairment

Objectives

1. List signs, symptoms, and diagnostic approach to the following common cognitive disorders of the elderly:
    a. Delirium
    b. Alzheimer's disease
    c. vascular dementia
    d. frontotemporal dementia
    e. Lewy body dementia
    f. Parkinson dementia
2. Conduct and interpret a screening examination for cognitive impairment.
3. Conduct and interpret a diagnostic evaluation for a patient with cognitive impairment using cognitive testing, lab studies, and brain imaging.
4. Implement basic principles of dementia management, including medication use, nonpharmacologic management of behavioral symptoms, and community resources.

Suggested Readings:

Recommended Reading

Sloane, PD, Slatt, LM, Ebell, MH, Jacques, LB & Smith, MA (2011) *Essentials of Family Medicine* (6th edition) Baltimore, MD: Lippincott, William & Wilkens

Primary Care Dermatology

Learning Objectives:

After participating in the Primary Care Dermatology didactic session, the student should be able to:

1. Describe any skin lesion using appropriate descriptive terminology after inspecting and palpating the lesion.

2. Classify any common skin condition into the appropriate "Lynch Algorithm" category.

3. Differentiate potentially malignant skin neoplasm from those that are benign, discuss screening recommendations for skin cancer and counsel patients on malignant skin neoplasm and their prevention.

   USPSTF states: Insufficient evidence for or against routine screening for skin cancer in asymptomatic patients.
   http://www.uspreventiveservicestaskforce.org/uspstf/uspsskca.htm

4. Describe initial therapy for acne patients.

Recommended Readings

1. Lynch P., Algorithm for classification of skin lesions into 10 groups (adapted by R. Pust). Chart.
2. Lewis, EJ and Dahl, MV, On standard Definitions: 33 Years Hence, Arch Dermatol Sep 1997 (33) 1167.
   http://archderm.jamanetwork.com/article.aspx?articleid=559280

3. Titus S and Hodge J. Diagnosis and Treatment of Acne. AFP Oct 15, 2012
   http://www.ncbi.nlm.nih.gov/pubmed/23062156

4. Shenenberger, DW. Cutaneous Melanoma: A primary Care Perspective, AFP 2012 Jan 15; 85(2) 161-168
   http://www.aafp.org/afp/2005/0715/p269.html

5. Berke R. and Sing, A. Atopic Dermatitis. An Overview. AFP. July 2011; 86 (1):35-42.
   http://www.ncbi.nlm.nih.gov/pubmed/22962911

6. Coutinho, Barry. STEPS. New Drug Reviews. Dapsone (Aczone) 5% Gel for the Treatment of Acne. Am Fam Physician. 2010 Feb 15;81(4):451-452.
   http://www.aafp.org/afp/2010/0215/p451.html
7. Screening for Skin Cancer: Recommendation Statement. Am Fam Physician. 2010 Jun 15;81(12):1433-1434.
   http://www.aafp.org/afp/2010/0615/p1433.html

8. Pickett, H . Shave and Punch Biopsy for Skin Lesions. Am Fam Physician. 2011 Nov1 15; 84(9):995-1102.
http://www.aafp.org/afp/2011/1101/p995.html

9. Ely JW and Stone, MS The Generalized Rash: Part I. Differential Diagnosis Am Fam Physician. 2010 Mar 15;81(6)726-724
http://www.aafp.org/afp/2010/0315/p726.html

10. Ely JW and Stone, MS The Generalized Rash: Part II. Diagnostic Approach Am Fam Physician. 2010 Mar 15;81(6)735-739
http://www.aafp.org/afp/2010/0315/p735.html

Supplemental Readings/Websites

1. Interactive Morphology Tutorial.
http://www.logicalimages.com/morphology/morphology3_content.html

LYNCH ALGORITHM

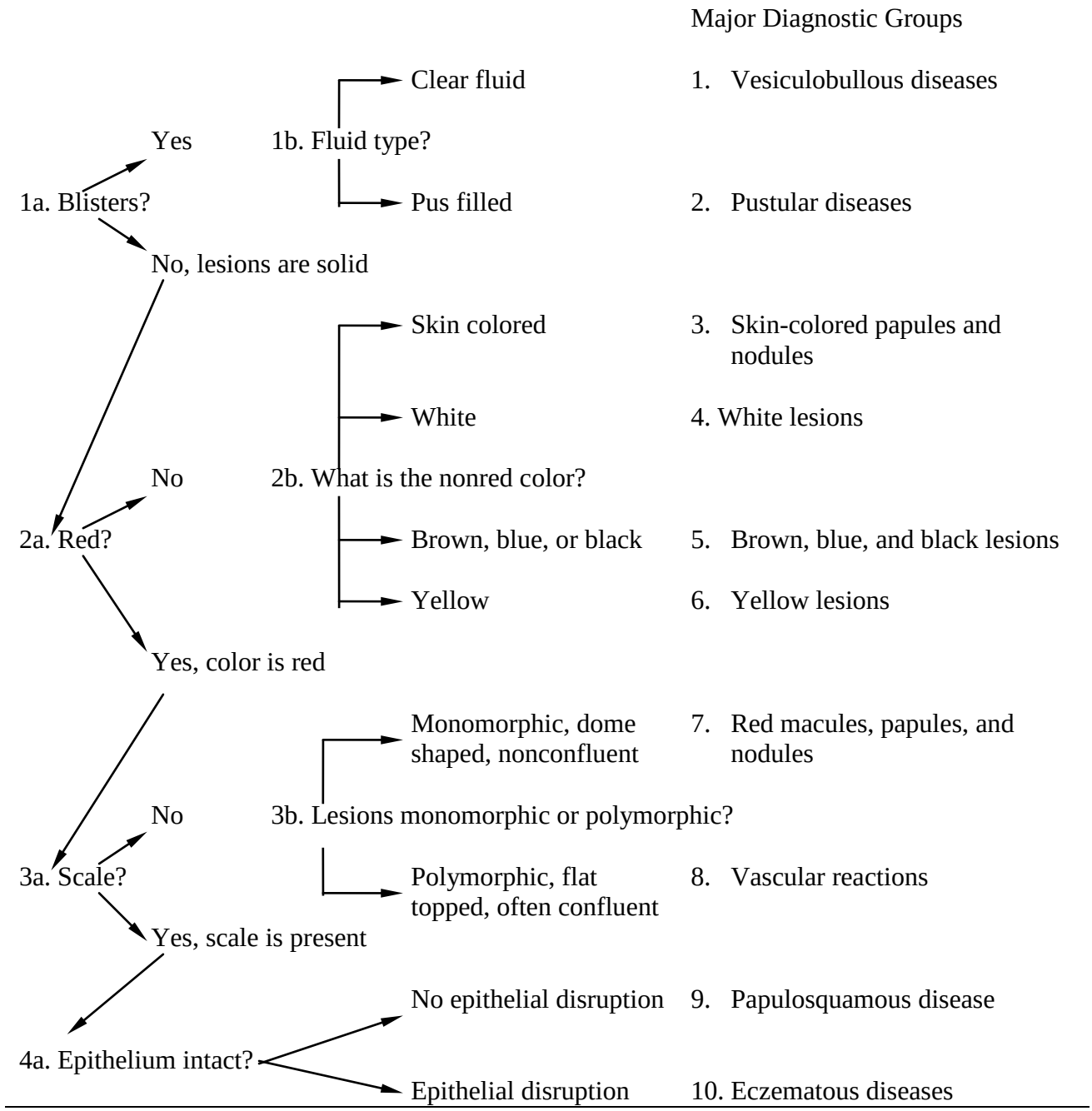


Figure 5.1 Algorithm for unknown skin disease.

From: Lynch PJ. Dermatology. 3rd ed. Baltimore: Williams & Wilkins, 1994.

CHAPTER 5 : PROBLEM-ORIENTED DIAGNOSIS
From: Lynch PJ. Dermatology. 3rd ed. Baltimore: Williams & Wilkins; 1994.

Table 5.1
Essential Dermatologic Diseases

I. Vesiculobullous diseases

A. Vesicular diseases
   i. Herpes simplex
   ii. Varicella-zoster
   iii. Vesicular tinea pedis
   iv. Dyshidrosis (pompholyx)
   v. Dermatitis herpetiformis
   vi. Scabies

B. Bullous disease
   i. Pemphigus vulgaris
   ii. Pemphigold
   iii. Erythema multiforme bullosum (Stevens-Johnson syndrome)
   iv. Poison Ivy contact dermatitis
   v. Bullous impetigo
   vi. Traumatic bullae (friction, burns and pressure)

2. Pustular diseases
   A. True (soft) pustules
      i. Acne vulgaris and related variants
      ii. Rosacea (acne rosacea)
      iii. Bacterial folliculitis
      iv. Fungal folliculitis
      v. Candidiasis
   B. Pseudopostules (see group 4, white papules)
      i. (Milia)
      ii. (Keratosis pilaris)
      iii. (Molluscum contagiosum)

3. Skin-colored papules and nodules
   A. Rough surfaced (keratotic) lesions
      i. Warts: verruca vulgaris, paronychial warts and plantar warts
      ii. Actinic keratoses
      iii. Squamous cell carcinoma (actinically induced)
      iv. Corns and calluses
   B. Smooth-surfaced (nonkeratotic) lesions
      i. Warts: flat warts, genital warts
      ii. Basal cell carcinoma
      iii. Squamous cell carcinoma (mucosal and non-actinically induced)
      iv. Epidermoid ("sebaceous") cysts
      v. Lipomas
      vi. Molluscum contagiosum

4. White lesions
   A. White patches and plaques
      i. Pityriasis (tinea) versicolor
      ii. Pityriasis alba
      iii. Vitiligo
   B. White papules
      i. Milia
      ii. Keratosis pilaris
      iii. Molluscum contagiosum

5. Brown, blue and black lesions
   A. Brown, blue and black macules, papules, and nodules
      i. Freckles
      ii. Lentigines
      iii. Nevi: junctional, compound and intradermal
      iv. Nevi: dysplastic
      v. Melanoma
      vi. Seborrheic keratoses
      vii. Dermatofibromas
   B. Brown, blue and black patches, plaques, and generalized hyperpentation
      i. Caf9-au-lait patches
      ii. Giant congenital nevi
      iii. Pigmentation secondary to drugs and systemic disease

6. Yellow lesions
   A. Yellow papules and plaques
      i. Xanthelasma
      ii. Sebaceous gland hyperplasia
   B. Yellow patches and generalized yellow color
      i. Necrobiosis lipoldica diabeticorum
      ii. Jaundice

7. Red macules, papules, and nodules
   A. Red macules and papules
      i. Insect bites
      ii. Cherry anglomas
      iii. Spider anglomas
      iv. Pyogenic granulomas
      v. Granuloma annulare
      vi. Viral exanthems (nonvesicular)
   B. Red nodules
      i. Furuncles
      ii. Inflamed cysts
      iii. Hidradenitis suppurativa
      iv. Cellulitis
      v. (Erythema nodosum)

8. Vascular reactions
   A. Nonpurpuric (blanchable) lesions
      i. Transient flat erythema (flushing reactions)
      ii. Persistent flat erythema
      iii. Urticaria and angloedema
      iv. Annular and gyrate erythemas
      v. Erythema multiforme
      vi. Erythema nodosum
   B. Pupuric (nonblanchable) lesions
      i. Petechiae (only)
      ii. Petechiae and ecchymoses (intravascular and extravasular purpura)
      iii. Petechiae with ulceration (vascular ulcers)

9. Papulosquamous diseases
   A. Macules and/or papules predominate
      i. Pityriasis rosea
      ii. Lichen planus
      iii. Secondary syphilis
      iv. (Guttate psoriasis)
   B. Patches and/or plaques predominate
      i. Psoriasis
      ii. Tinea corporis, cruris, pedis, manus and capitis
      iii. Lupus erythematosus (discold type)
      iv. Parapsoriasis and mycosis fungoldes

10. Eczematous (dermatitic) diseases
   A. Prominent excoriation and/or lichenification
      i. Atopic dermatitis (neurodermatitis, lichen simplex chronicus, infantile eczema)
      ii. Dyshidrotic eczema
      iii. Stasis dermatitis
      iv. Scabies (scabetic eczema)
      v. Exfoliative erythrodermatitis
   B. Minimal excoriation
      i. Seborrheic dermatitis
      ii. Xerotic eczema
      iii. Irritant contact dermatitis
      iv. Allergic contact dermatitis
      v. Eczematous reaction patterns (nummular eczema and auto-eczematization)

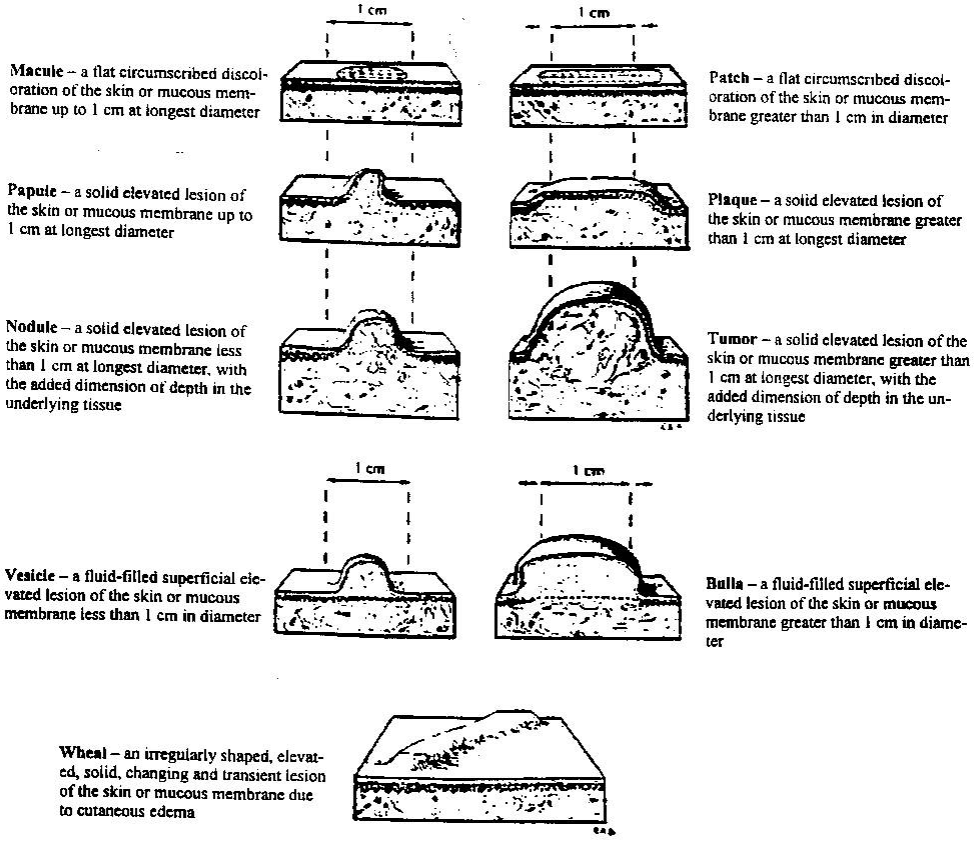


Figure 4. Primary cutaneous lesions. (From Stewart WD, Danto JL, Maddin S. **Dermatology: Diagnosis and treatment of cutaneoud disorders.** *4th ed. St. Louis: Mosby-Year Book, 1978.)*

TABLE 1.

Screening for Skin Cancer: Clinical Summary of the USPSTF Recommendation

Population	Adult general population*
I statement	No recommendation because of insufficient evidence
Risk assessment	Skin cancer risks include family history of skin cancer and considerable history of sun exposure and sunburns Groups at increased risk of melanoma: • Fair-skinned men and women older than 65 years • Patients with atypical moles • Patients with more than 50 moles
Screening tests	There is insufficient evidence to assess the balance of benefits and harms of whole-body skin examination by a primary care physician or patient skin self-examination for the early detection of skin cancer.
Suggestions for practice	Physicians should remain alert for skin lesions with malignant features that are noted while performing physical examinations for other purposes. Features associated with increased risk of malignancy include asymmetry, border irregularity, color variability, diameter greater than 6 mm (ABCD criteria), or rapidly changing lesions. Suspicious lesions should be biopsied.
Other relevant recommendations from the USPSTF and the U.S. Task Force on Community Preventive Services	The USPSTF has reviewed the evidence for counseling to prevent skin cancer. The recommendation statement and supporting documents can be accessed at http://www.ahrq.gov/clinic/uspstf/uspsskco.htm. The U.S. Task Force on Community Preventive Services has reviewed the evidence on interventions to reduce skin cancer. The recommendations can be accessed at http://www.thecommunityguide.org.

NOTE: *For the full USPSTF recommendation statement and supporting documents, visit http://www.preventiveservices.ahrq.gov.*
USPSTF = U.S. Preventive Services Task Force.
**— The USPSTF did not examine outcomes related to surveillance of patients with familial syndromes, such as familial atypical mole and melanoma syndrome.*

DIABETES, CULTURE AND CHRONIC DISEASE

At the end of the case discussion the student should be able to:

Learning Objectives

1. Briefly review American Diabetes Association (ADA) screening recommendations for type 2 diabetes comparing and contrasting these to USPSTF recommendations.

Screening Criteria for Diabetes Mellitus

American Diabetes Association

Testing should be considered in all adults who are overweight (body mass index ≥ 25 kg per m^2) and have additional risk factors:

- Physical inactivity
- First-degree relative with diabetes
- Members of high-risk ethnic populations
- Women who delivered a newborn weighing > 9 lb (4.1 kg) or were diagnosed with gestational diabetes
- Hypertension
- High-density lipoprotein cholesterol < 35 mg per dL (0.91 mmol per L) or triglyceride level > 250 mg per dL (2.82 mmol per L)
- Women with polycystic ovary syndrome
- Impaired glucose tolerance or impaired fasting glucose on previous tests
- Other clinical conditions associated with insulin resistance

History of cardiovascular disease

In the absence of the above criteria, testing for diabetes and prediabetes should begin at 45 years of age

If the results are normal, testing should be repeated at least at three-year intervals, with consideration of more frequent testing dependent on initial results and risk status

Pre-2008 U.S. Preventive Services Task Force

Screening for type 2 diabetes is recommended in adults with hypertension or hyperlipidemia

Evidence is insufficient to recommend for or against routinely screening asymptomatic adults for type 2 diabetes, impaired glucose tolerance, or impaired fasting glucose

2008 U.S. Preventive Services Task Force

Screening is recommended for asymptomatic adults with sustained blood pressure > 135/80 mm Hg

USPSTF finds insufficient evidence for or against routing screening of asymptomatic adults for type 2 DM (I recommendation Grade 1 evidence.

---

2. List common symptoms of type 2 diabetes.

3. State Criteria for diagnosis of type 2 diabetes

4. List the physical examination and lab tests that are followed in a type 2 diabetic patient.

5. List patient variables that are considered in the management of type 2 diabetes.

6. Practice obtaining a patient's view of their illness and treatment using the ETHNIC mnemonic.

7. Discuss known complications of type 2 diabetes.

8. List treatment goals to prevent these complications.

9. Explain the rationale for using metformin as a first line agent for most patients and briefly review other classes of oral and injectable agents used in the treatment of type 2 diabetes.

10. Identify the six components of the Chronic Disease Model using diabetes as an example.

11. Identify the aspects of care that should be recognized in the elderly?

Recommened Readings

1. Diabetic foot screening – guideline summary. Group health cooperative of Puget Sound, 1996-1999.
2. Chronic Care Model Appendix.
3. A Comparison of Screening Guidelines for Diabetes Mellitus. Am Fam Physician 2010 Sep 15;82(6):684-686. http://www.aafp.org/afp/2010/0915/p684.html
4. Patel, Parita, et al. Diabetes Mellitus: Diagnosis and Screening. Am Fam Physician. 2010 Apr 1;81(7):863-870. http://www.aafp.org/afp/2010/0401/p863.html
5. Centers for Disease Control and Prevention. National diabetes fact sheet, 2011. *Online* http://www.cdc.gov/diabetes/pubs/pdf/ndfs_2011.pdf
6. Cordts S. Self-Monitoring of Blood Glucose in Patients with Type 2 Diabetes Not Using Insulin. Am Fam Physician. 2012 May 1:85(9):866-867. http://www.aafp.org/afp/2012/0501/p866.html
7. Petznick, A. Insulin Management of Type 2 Diabetes Mellitus. Am Fam Physician. 2011; 84(2):183-190. http://www.aafp.org/afp/2011/0715/p183.pdf
8. Ismail-Beigi, F. Glycemic Management of Type 2 Diabetes Mellitus N Engl J Med. 2012; 366;1319-27. http://www.nejm.org/doi/full/10.1056/nejmcp1013127
9. Maria, Lambert. Practice Guidelines. ADA Releases Revisions to Recommendations for Standards of Medical Care in Diabetes. Am Fam Physician. 2012 Mar 1;85(5):514-515 http://www.aafp.org/afp/2012/0301/p514.html

10. Qaseem, Amir, et.al. Oral Pharmacologic Treatment of Type 2 Diabetes Mellitus: A Clinical Practice Guideline From the American College of Physicians Ann Intern Med 2012 Feb 7;156,(3); 218-231. http://annals.org/article.aspx?articleid=1033354
11. Chamberlain, J et al. Pharmacologic Terapy for Type 2 Diabetes: Synopsis of the 2017 American Diabetes Association Standards of Medical Care in Diabetes Ann Intern Med 2017;166(8) 572-578 http://annals.org/aim/article/2609290/pharmacologic-therapy-type-2-diabetes-synopsis-2017-american-diabetes-association

Supplemental Readings/Websites

1. Psaty BM, Furberg CD. Rosiglitazone and cardiovascular risk. New England Journal of Med 2007; http://content.nejm.org/cgi/reprint/NEJMe078099v1.pdf Accessed 5/30/2007.

2. Roett M. Diabetic Nephropathy-The Family Physician's Role. Am Fam Physician. 2012 May 1;85(9):883-889. http://www.aafp.org/afp/2012/0501/p883.html

Table 1. Criteria for testing for diabetes in asymptomatic adult individuals ADA

1. Testing for diabetes should be considered in all individuals at age 45 years and above and, if normal, it should be repeated at 3-year intervals.
2. Testing should be considered at a younger age or be carried out more frequently in individuals who

- are overweight (BMI 25 kg/m2)
- have a first-degree relative with diabetes
- are members of a high-risk ethnic population (e.g., African-American, Latino, Native American, Asian-American, Pacific Islander)
- have delivered a baby weighing >9 lb or have been diagnosed with GDM
- are hypertensive (140/90 mmHg)
- have an HDL cholesterol level ≤35 mg/dl (0.90 mmol/l) and/or a triglyceride level ≥250 mg/dl (2.82 mmol/l)
- on previous testing, had IGT or IFG
- have other clinical conditions associated with insulin resistance (e.g. PCOS or acanthosis nigricans)

Table 2. Testing for type 2 diabetes in children ADA

Criteria*

- Overweight (BMI >85th percentile for age and sex, weight for height >85th percentile, or weight >120% of ideal for height)

Plus any two of the following risk factors:

- Family history of type 2 diabetes in first- or second-degree relative
- Race/ethnicity (Native American, African-American, Latino, Asian-American, Pacific Islander)
- Signs of insulin resistance or conditions associated with insulin resistance (acanthosis nigricans, hypertension, dyslipidemia, or PCOS)
- Age of initiation: age 10 years or at onset of puberty, if puberty occurs at a younger age

Frequency: every 2 years
Test: FPG preferred

Group Health Cooperative of Puget Sound

SCREENING EVALUATION TOOL FOR DIABETIC FOOT RISK ASSESSMENT

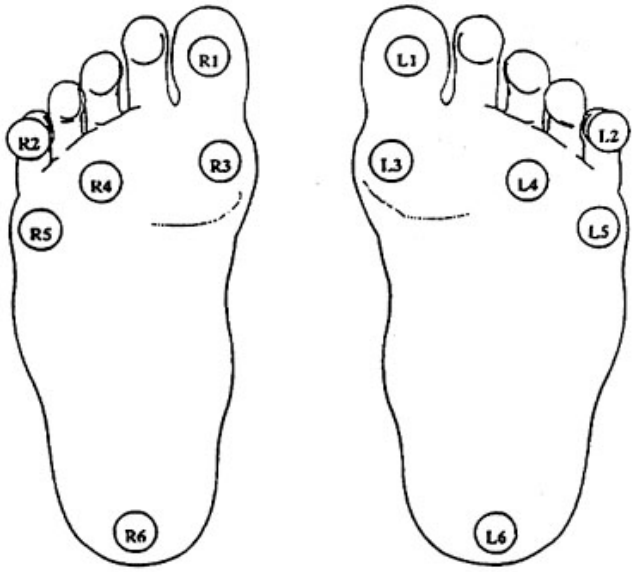
NAME

CONSUMER NUMBER

Chart Race

DATE OF BIRTH

1. History of previous foot ulcer or amputation:	Yes	No
2. Foot deformity (claw/hammer toes, bony prominence, Charcot deformity):	Yes	No
3. Bunion, excessive callus or corn present:	Yes	No
4. Insensate to 5.07 monofilament (at any site on either foot):	Yes	No
5. Current ulcer/infection/cellulitis:	Yes	No



If "No" to ALL of the above questions, feet are "low risk" and should be evaluated annually.

If "Yes" to **any** of these, the feet should be categorized as "high risk" and the following steps should be taken:

1. If an ulcer is present, then the "Diabetic Foot Ulcer Management Algorithm" should be followed and prophylactic intervention (see below) should be offered for the uninvolved foot.
2. Provide patient with instructions per the "Patient Self-Management Agreement (contract) for Diabetes High Risk Preventative Foot Care." **Be certain to ask the patient if s/he or someone in their home can reach the feet to do the prescribed foot care.** If the patient or someone is not available or able to do the foot care, then refer the patient for routine foot care to either someone in the clinic who provides those services, or if not available, then refer to a podiatrist (List of contracted providers in GHC InContext).
3. Determine if patient needs protective footwear to prevent foot ulcer (especially feet that have deformity, bunions, heavy calluses), and, if so, then refer to a certified, licensed pedorthist, or if not available, then refer to a podiatrist who offers pedorthic services.
4. Reassess "high risk" feet without ulcers no less than 3 times per year, and review self-management care of feet at those contact times.

Provider

Date

DMC 2413 (10/98)
MRF0467/5

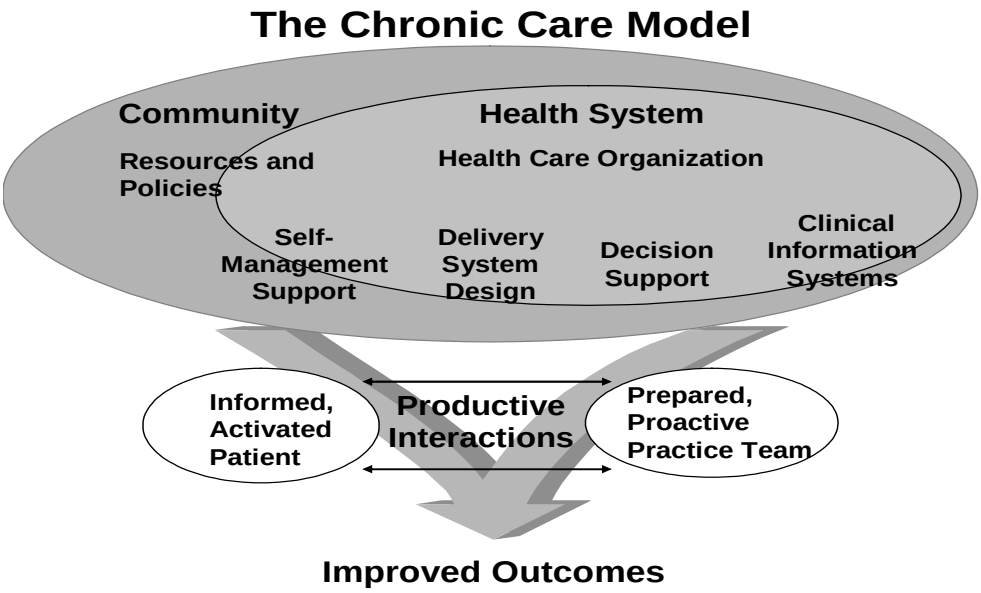
ORIGINAL: Outpatient Medical Record/Ongoing Clinical Care
CANARY: Primary Practice Nurse/Data Entry Copy

The Chronic Care Model and the Innovative Care for Chronic Conditions Framework (please see the Appendix for more information) provide extremely valuable approaches for addressing chronic conditions. These important elements of the models are:

Chronic Care Model	Innovative Care for Chronic Conditions Framework	
6 essential elements	*6 guiding principles*	*8 essential elements*
1. The community	1. Evidenced-based decision making	1. Support a paradigm shift
2. The health system	2. Population focus (vs. individual)	2. Manage the political environment
3. Self-management support	3. Prevention focus	3. Build integrated health care
4. Delivery system design	4. Quality focus	4. Align sectoral policies for health
5. Decision support	5. Integration	5. Use health center care personnel more effectively
6. Clinical information systems	6. Flexibility/adaptability	6. Center care on patient and family
		7. Support patients in their communities
		8. Emphasize prevention

Summary of the Chronic Care Model

The elements of good chronic illness care require productive clinical interactions between informed patients and prepared, proactive practice teams.



The Development of the Chronic Care Model

The MacColl Institute for Healthcare Innovation at the Group Health Cooperative developed the Chronic Care Model (CCM) drawing on available literature about promising strategies for chronic illness management. The model was further refined during a nine-month planning project supported by the Robert Wood Johnson Foundation (RWJF). After revision from a large panel of national experts, the model was subsequently used to collect and analyze data from innovative programs recommended by experts. RWJF then provided funding for a program to test the model nationally across varied health care settings; the national program was called "Improving Chronic Illness Care" (ICIC).

The CCM provides an organizational approach for caring for people with chronic illness in a primary care setting. The model advocates that improvements in approaches to chronic conditions can be accomplished by creating a health care system that is practical, supportive, and population- and evidence-based, and that promotes an interactive relationship between patients who are informed and motivated and a health care team that is prepared and proactive. The CCM also identifies six essential elements of a health care system that encourage high-quality chronic illness care. These elements are:

1. The community
2. The health system
3. Self-management support
4. Delivery system design
5. Decision support
6. Clinical information systems

DYSURIA

Learning Objectives

At the end of the case discussion the student should be able to:

1. List six causes of dysuria in women.

2. Differentiate three causes of dysuria in men.

3. State which is the most sensitive (although not most specific) aspect of the urinalysis for diagnosing urinary tract infection.

4. List 3 medicines recommended for standard 3-5 day or 1-day therapy for uncomplicated UTI.

5. List five categories of patients for longer therapy of urinary tract infections.

6. Discuss the utility of urine cultures.

7. Describe 3 regimens that women can use if they have recurrent urinary tract infections.

9. List the three common infectious causes of vaginitis findings on “wet preps” and the treatment of each type.

10. Generate and carry out an evidence based medicine search on a diagnostic or treatment question raised during this session.
    -A diagnostic question should identify a gold standard and address the sensitivity and specificity of the test in question.
    -A treatment question should be phrased in the form of a PICO (population, intervention, comparison, and outcome). Find the best available, relevant, and valid evidence to answer the question.
    Students can use their search engine of choice. Possibilities include the AHSL EBM Search or Dynamed.

Recommended Readings

1. Revised AAP Guideline on UTI in Febrile Infants and Young Children - November 15, 2012 - American Family Physician http://www.aafp.org/afp/2012/1115/p940.html

2. Hainer BL, Gibson MV. Vaginitis: Diagnosis and Treatment. Am Fam Phys 2011 Apr 1;83(7):807-815. http://www.aafp.org/afp/2011/0401/p807.html

3. Simerville JA, Maxxted WC, Pahira, JJ. Urinalysis: a Comprehensive Review. Am Fam Phys 2005; 71(6) 1154-62http://www.aafp.org/afp/2005/0315/p1153.html

4. Colgan, R, Williams, M. Diagnosis and Treatment of Acute Uncomplicated Cystitis. Am Fam Physician 2011 Oct 1;74:771-7766 http://www.aafp.org/afp2011/1001/p771.html

5. French LM, et al. Interstitial Cystitis/Painful Bladder Syndrome. Am Fam Phys. 2011 May 15; 83(10):1175-81.http://www.aafp.org/afp/2011/0515/p1175.html

6. Practice Guidelines: American Urological Association Approach to the Diagnosis and Management of IC/BPS - July 1, 2012 - American Family Physician http://www.aafp.org/afp/2012/0701/p97.html

7. Kodner CM, et al. Recurrent Urinary Tract Infections in Women: Diagnosis and Management. Am Fam Phys. 2010 Sep 15;82(6):638-643. http://www.aafp.org/afp/2010/0915/p638.html

8. Simati B, et al. FPIN's Clinical Inquiries: Dipstick Urinalysis for the Diagnosis of acute UTI. Am Fam Phys. 2013 May 15;87(10):online http://www.aafp.org/afp/2013/0515/od2.html

EXTREMITY PAIN

(INJURIES, OVERUSE OR ENTRAPMENT SYNDROMES, ARTHRITIS)

Learning Objectives

1. General:

   Develop a differential for joint pain. See Table 1 and Table 2.

2. Knee

   A. Localize (with the patient in the *optimum position* for each finding) the point tenderness, ligamentous laxity, or fluid, in a knee that has:

      Lying down:

      Sitting on table

      Standing:

   B. Discuss common knee injuries, their mechanism, symptoms signs and special tests and initial therapy

      1. Anterior Cruciate Ligament (ACL) Tear

      2. Meniscus Tear

      3. Collateral Ligament Injury

      4. PCL

5. Patellofemoral Pain

C. Discuss prevalence of osteoarthritis of knee and treatment options

3. Shoulder

Differentiate findings between articular and extra-articular pathology during a shoulder evaluation.

Demonstrate the physical findings in the shoulder evaluation and initial treatment for each of the problems listed below:

a. Rotator cuff tendonitis/impingement

b. Adhesive capsulitis (frozen shoulder)

c. Bursitis

d. Bicepital tendonitis

4. Ankle (and Foot)

a. Recall the two "Ottawa" decision rules for the use of radiography in acute ankle sprains:

b. Describe the severity of ligamentous injury in grades 1, 2, and 3 ankle sprains and important differences in the treatment of each grade.

c. Interdigital (Morton's) neuroma

d. Plantar Faciitis
Classic signs are heel pain with the first few steps in the a.m.

5. Wrist and Hand

Demarcate the distribution of pain/paresthesias/numbness/weakness and demonstrate provocative tests in:

a. Median nerve (carpal tunnel syndrome)

Other entrapment/overuse syndromes:

b. Ulnar nerve

c. Double/multiple crush nerve entrapment)

Describe the usual cause (*trauma, cumulative/repetitive stress or disease process*) that precedes the following diagnosis and be able to demonstrate a provocative test and/or list the physical findings to support your diagnosis and treatment:

a. DeQuervain's tenosynovitis

b. Ganglion cysts

c. Septic arthritis

Recommended Readings

1. Pust R. Approach to the extremely painful joint. 1995. Table 1.
2. Campos-Outcalt D, Pust R. Differential features of common types of non-traumatic, acute arthritis. 1998. Table 2.
3. Campos-Outcalt D, Pust R. Classic findings in synovial fluid in three major categories of joint disease. 1998. Table 3.
4. Pust R. Extremity/joint pain-common problems in 4 joints. 1999.
5. Pust R, Carroll T. Extremity pain: a systematic approach to clinical diagnosis. 1999.
6. Update on Acute Ankle Sprains - June 15, 2012 - American Family Physician http://www.aafp.org/afp/2012/0615/p1170.html
7. Evaluation and Diagnosis of Wrist Pain: A Case-Based Approach - April 15, 2013 - American Family Physician http://www.aafp.org/afp/2013/0415/p568.html
8. Calmbach W, Hutchens, M. Evaluation of Patients Presenting with Knee Pain: Part 1. History, Physical Examination, Radiographs, and Laboratory Tests. Am Fam Physician 2003; 68:907-12. http://www.aafp.org/afp/2003/0901/p907.html
9. Calmbach W, Huchens M. Evaluation of Patients Presenting with Knee Pain: Part II. Differential Diagnosis. Am Fam Physician 2003; 68:917-22. http://www.aafp.org/afp/2003/0901/p917.html
10. Schraeder T.L, et al. Videos in Clinical Medicine. Clinical Evaluation of the Knee. 2010 July 22;363:e5; N Engl J Med http://www.nejm.org/doi/full/10.1056/NEJMvcm0803821
11. Sinusas, K. Osteoarthritis: Diagnosis and Treatment - - Am Fam Physician. 2012 Dec 1;86(11):994-998.http://www.aafp.org/afp/2012/0101/p49.html

12. Grover, M Evaluating Acutely Injured Patients for Internal Derangement of the Knee. Am Fam Physician 2012;85(3)247-252. http://www.aafp.org/afp/2012/0201/p247.pdf

13. Burbank K, et al. Chronic Shoulder Pain: Part I. Evaluation and Diagnosis. Am Fam Physician 2008;77(4):453-460. http://www.aafp.org/afp/2008/0215/p493.html

14. Burbank K, et al. Chronic Shoulder Pain: Part II. Treatment. Am Fam Physician 2008;77(4)493-497. http://www.aafp.org/afp/2008/0215/p493.html

15. Dixit, S et. al., Management of Patellofemoral Pain Syndrome. Am Fam Physician 2007;75(2194-202. http://www.aafp.org/afp/2007/0115/p194.pdf

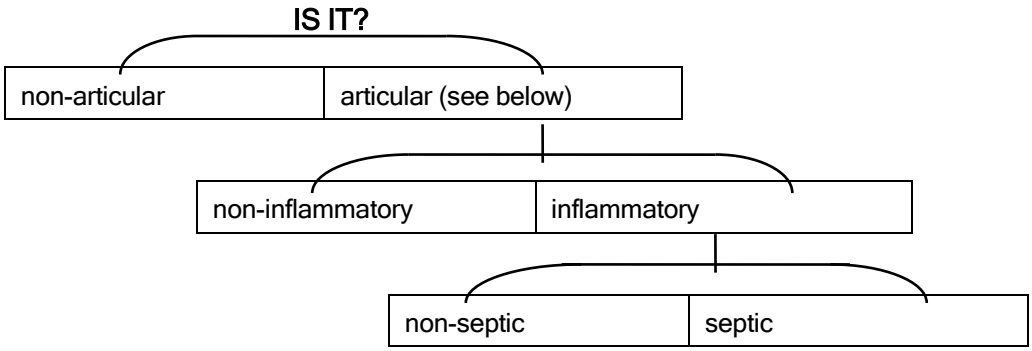
16. Practice Guidelines ACR Issues Recommendation on Therapies for Osteoarthritis of the Hand, Hip and Kiee
Am Fam Physician 2013;87(7)515-516. http://www.aafp.org/afp/2013/0401/p515.pdf

Supplemental Readings/Websites

Diagnosis and Management of Rheumatoid Arthritis - December 1, 2011 - American Family Family Physician
http://www.aafp.org/afp/2011/1201/p1245.html

TABLE 1

APPROACH TO THE EXTREMELY PAINFUL JOINT



Also consider whether the joint involvement is ...

axial	or	peripheral?
additive	or	migratory?
polyarticular	or	monoarticular
systemic	or	local?

	NON-ARTICULAR	ARTICULAR
Pain With Motion	active motion only	active and passive
Tenderness	point tenderness	general or vague
Location of Pain	over prominent bone or tendon	described as "inside" the joint
Inflammation	unusual	common

Do not tap a joint through infected skin or cellulitis!

Diagram by Ron Pust 5/31/95

TABLE 2

Differential Features of Common Types of Non-Traumatic, Acute Arthritis

	History	Physical	Lab/X-ray
Arthralgia only (no signs of arthritis)	suggests viral disease. if total lack of other symptoms, explore psychogenic cause	normal joint exam	ESR - normal Xray - usually not needed
Fibrositis/myositis	history of overuse, injury or stress	non-articular point tenderness; pain on active ROM only	ESR - normal Xray - usually not needed
Osteoarthritis*	gradual onset of pain, stiffness and decreased range of motion. Worse after use (i.e., late in day)	enlarged joint (spurs), ± crepitus, effusion uncommon, no heat or redness (no synovial inflammation)	ESR - normal Xray - spurs, eburnation, decreased joint space
Rheumatoid Arthritis	systemic symptoms, morning stiffness, often involves small joints of hands, esp MCP	tender, inflamed, with synovial hypertrophy; subcutaneous nodules (in some patients)	ESR-elevated, ANA negative, RF-positive (usually) ± anemia Xray - demineralization then deformity later
Gout* (Pseudogout)	acute morning attack, single joint (MTP or knee common); family history or prior history in patient; usually (9:1) male (less "classic")	usually one very painful, warm red/blue joint with effusion (less severe than gout)	urate crystals in joint fluid. Xray - normal unless recurrent, long-standing (calcium pyrophosphate crystals)

*Consider these diagnoses especially in elderly patients. Also consider the following conditions, which can cause joint pain: Paget's, neuropathic pain and polymyalgia rheumatica.

TABLE 3

Classic Findings in Synovial Fluid in Three Major Categories of Joint Disease*

Synovial Fluid	Normal	Non-inflammatory I	R.A. and Other Inflammatory II	Septic Arthritis III
Color	clear	clear-yellow	yellow	variable
Clarity	transparent	transparent	turbid	opaque
Viscosity	high	high	low	low
Mucin Clot**	good	fair	fair	poor
White cells (mm^3)	<150	<3000	3500-50,000	50,000-100,000
PMN %	<25	<25	>70	>75
Glucose Difference: Serum vs Synovial**	0	$\leq$5	$\geq$30	$\geq$30
Protein (g/dl)**	1.8	3.0	4.2	4.9

* Classic examples of each type:

I Non-Inflammatory: Osteoarthritis, trauma, etc.
II Inflammatory: Rheumatoid and related arthridites
III Septic: Bacterial (other infections, eg. TB, or cocci, may fall under category I or II)

** Of questionable value in differentiating type.

FCM CLERKSHIP- SESSION OUTLINE
EXTREMITY/JOINT PAIN - COMMON PROBLEMS IN 4 JOINTS

(Back Pain is a separate unit)

For all joints: Exam, using anatomy for diagnosis

- Knee (stability joint)
  - * Medial Collateral Ligament laxity (unstable knee)
  - Physical Therapy (Quadriceps-strengthening)
  - Your (student) case(s) on FCM Clerkship
  - General Rx "R.I.C.E." ± NSAIDS

- Shoulder (mobility joint)
  - Range of motion terminology: Demo and measure (goniometry)
  - * Impingement Syndrome (subacromial) and "frozen shoulder" (adhesive capsulitis)
  - Physical Therapy: general & specific
  - Referral Process: ask a specific question of the physiotherapist or orthopedist

- Wrist-Hand
  - History: Fall? Occupation and Hobbies: Repetitive stress?
  - * Carpal Tunnel Syndrome
  - Neuroanatomy: Three sensory nerves of hand (motor damage indicates late or severe problem)
  - Physical Therapy: Splinting and other measures, including "ergonomics"

- Ankle (trauma)
  - Ottawa Rules for when to x-ray - see JAMA
  - * Sprain (type and severity)
  - Crutches - fitting and gait practice (NWB vs PWB)

* indicates class session demonstration of this disorder

Extremity Pain: A Systematic Approach to Clinical Diagnosis

General Considerations for all limb pain
(for details of knee, shoulder, wrist and ankle, see following pages)

History taking for the injured limb: "Sacred 7" adapted to extremity pain
What is the age and occupation/hobbies of the patient? (both are relevant to differential diagnosis, e.g., arthritis vs. overuse)
Where is the pain? specific vs. general
How long has the patient had it?
Was there an injury? (minor injuries can complicate with adhesive capsulitis)
Are there any other joints involved? (rheumatoid, gout, osteoarthritis)
Does the pain spread/travel? (the further down the limb, the more severe the injury)
Can the patient lie on that side at night?
Any pain at night?
Pain while the extremity is held still?

Presentation of the disorder - the SINSS acronym
Severity: minimal, moderate, or severe
Irritability: exacerbation tolerance and time to subside
Nature: trauma, inflammation, infection
Stage: acute, subacute, chronic
Stability: painful, painful/stiff, stiff

Possible Structures at Fault (initial hypotheses guide physical exam)
Joints under the area of symptoms
Joints which might refer into the area of symptoms
Contractile structure under the area of symptoms
Other structures to be examined above and below area of symptoms
Neurological structures

Physical Examination
Palpate, observe, question and interact
- Function
- ROM
- Strength
- Resistive Tests
- Special Tests

Exploration of the complaint will be guided by the subjective evaluation and will vary in emphasis, content and vigor.

Resistive and Special Tests

Knee	Shoulder	Hand/Wrist	Ankle
Meniscal McMurray's Cruciates Drawer tests Lachman's (ACL) Collateral Test in extension and 30 degrees Subluxation Apprehension Patellar irritability Compression	Rotator Cuff drop arm painful arc impingement Long Head of the Biceps Yergason Test Instability Drawer tests Apprehension Neurologic Upper Limb Tension Peripheral entrapment Adson, Tinel Lower Limb Tension	Vascular Allen Test Neurological Phalen's Tinel Monofilament Tendonitis (1st compartment) Finkelstein's Metacarpal-Trapezial OA Grind test	Instability Ant. Drawer Talar Tilt Neurological Tinel Monofilament

KNEE (Stability Joint)

Think COMMON CLINICAL PROBLEM AREAS

External Ligaments (collaterals)
Internal Ligaments (cruciates)
Meniscus
Patellar/Sub Patellar
Prominent Muscles of the leg
Popliteal Fossa
Hip↔ Knee referred pain

Physical Examination of the Knee Problem Patient

STAND

a. Inspect: Anterior (symmetry, swelling , Q-angle)
b. Palpate: Posterior (Baker's popliteal cyst)

STEPS

Observe: Gait and Weight Bearing for all back and lower extremity complaints

SIT

a. Palpate:
   Locate the Joint Line; Anatomical Landmarks; localize point tenderness to these landmarks; Anserine/Patellar bursas
b. ROM:
   Normal Active/Passive ROM (goniometry)

Motion	Normal range (degrees)
Flexion	130°
Extension	0 (+5) °
Internal Rotation	45 °
External Rotation	45 °

c. Strength:
   Manual Muscle Testing (0/5-5/5) (5 is full strength)
   quadriceps (L2-4), hamstrings (L5-S1), internal/external rotation

SUPINE

b. Stability:
   Drawer Test (ACL/PCL), Collaterals (test in extension and 30 degrees)
c. Special Tests:
   Meniscal
      McMurray's
   Patellar irritability
      Compression, Apprehension, Knee Joint Effusion
      Should you tap? If so, where?

Note: If you suspect neurologic involvement, add reflex and sensation testing

SHOULDER (Mobility Joint)

Think COMMON CLINICAL PROBLEM AREAS
Rotator Cuff
Subacromial and Subdeltoid Bursae
Capsule/Joints
The Axilla
Prominent Muscles of the Shoulder Girdle

Physical Examination of the Shoulder Problem Patient
STAND

a. Observe:
   Removing shirt/blouse (antalgic?)
b. Inspect:
   Posture: dynamic and static (rounded, elevated, retracted-protracted); symmetry.
c. Palpate:
   Anatomical landmarks; localize point tenderness to these landmarks
d. ROM:
   Normal Active ROM (goniometry)

Motion	Normal Range (degrees)
Flexion /Extension	180/60 ^{o}
Abd /Adduction	180/45 ^{o}
Internal Rotation	55 ^{o}
External Rotation	45 ^{o}

e. Special Tests:
   Rotator Cuff
   Drop Arm; Painful Arc Syndrome; Impingement test

SIT

a. Strength:
   Manual Muscle Testing (scale of 0-5 with 5 being normal strength)
   trapezius(C2-4),biceps(C5-6), triceps(C7-8), rotator cuff(C5-6)
b. Special Tests:
   Long Head of the Biceps
   Yergason Test

SUPINE

a. ROM:
   Passive/Assisted ROM; restricted motion
b. Stability:
   Drawer Test; Apprehension

Think Common Clinical Problem Areas: What if patient has:
Full active ROM: resistive motion hurts
Full passive ROM: one or more muscles weak
Limited passive ROM: What is the "end feel" (painful, hard, spongy, elastic, electric)
Note: If you suspect neurologic involvement, add reflex and sensation testing

HAND/WRIST

Think COMMON CLINICAL PROBLEM AREAS

Repetitive stress disorders
- carpal tunnel syndrome
- tendonitis (thumb, long flexors, tennis/golfer's elbow, trigger finger)
- ganglion cyst

Fractures (Colles', scaphoid, boxer)
Dislocations (interphalengeal-IP)
- trauma, rheumatoid arthritis (RA) (mallet, swan neck, boutonniere)

Physical Examination of the Hand/Wrist Problem Patient

a. Observe
- carriage, posture
- fine/gross motor skills

b. Inspect
- color, temperature (inflammation, reflex sympathetic dystrophy (RSD))
- deformities (RA, trauma)
- nails
- palmar fascia (Dupuytren's)

c. Palpate
- tenderness
- anatomic landmarks

d. ROM

	Normal Active
Wrist	
flexion/extension	90-45
ulnar/radial deviation	20-20
supination/pronation	90-90
Hand	

- thumb opposition/extension - "OK sign" to base of fifth digit-median nerve.
- finger flexion/extension-(common finger extensors pure radial nerve)(fingertips to distal palmar crease)
- abduction/adduction of digits-ulnar nerve

e. Strength
- grip/pinch (check bilaterally)

Special Tests

Neurological
- Phalen's, Tinel, monofilament (protective sensation)

Vascular
- Allen

Tendonitis
- 1st compartment-Finkelstein's
- forearm-elongation

Articular osteoarthritis (OA)
- stress (tap, grind)

FOOT/ANKLE

Think COMMON CLINICAL PROBLEM AREAS

Sprains/Strains (tibiotalar-1st,2nd,3rd degree)
Tears (Achilles' tendon, Gastrocnemius muscle)
Fractures
Plantar Fasciitis
Articular (gout, RA, OA, bunion, hammertoe)
Neurologic (Morton's neuroma, dysesthesias, Charcot's joint, foot drop, tarsal tunnel syndrome)
Diabetic complications (decreased vascular, sensory)

Physical Examination of the Foot/Ankle Problem Patient

a. Observe (ecchymosis, edema, deformities, cellulitis)
b. Inspect (joints, soft tissue, callus)
c. Palpate (tenderness, anatomical landmarks)
d. ROM/Strength

Normal Ankle active range of motion

	Goniometry/Manual Muscle Testing
dorsiflexion/plantar flexion	20-45 degrees
inversion/eversion	30-20

e. Special Tests
   - Instability (anterior drawer test, talar tilt, squeeze test)
   - Neurological (monofilament, Tinel)
   - Muscle-tendon (Thompson's test)

f. Lab: Radiographic (use Ottawa rule to decide whether to order films)

FATIGUE AND DEPRESSION

Learning Objectives

SOME EXAMPLES OF COMMON AND SEVERE/LIFE THREATENING CAUSES OF FATIGUE AND DEPRESSION

	Common Causes	Serious/Life Threatening
Child/Adolescent	infectious mono anemia depression/ adjustment reaction family violence substance abuse	pregnancy progressive neuromuscular disorder cancer
Adult	anemia thyroid type 2 DM depression chronic fatigue syndrome substance abuse sleep apnea	HIV TB adrenal insufficiency chronic kidney disease sleep apnea cancer pregnancy
Elderly	depression elder abuse dementia type 2 diabetes pulmonary insufficiency substance abuse polypharmacy	cancer malnutrition TB chronic kidney disease congestive heart failure

1. List three appropriate components of the history and initial laboratory diagnostic work-up to evaluate patients complaining of fatigue.

2. Describe nutritional considerations in the evaluation and treatment of fatigue.

3. State five reasons primary care physicians need to be able to recognize and treat depression.

4. List five factors that can cause or contribute to depression.

5. State five risk factors for suicide in patients with depression.

6. Describe an appropriate treatment plan for patients with depression.

7. Review current pharmacological therapies for depression and their potential side effects.

8. List 2 validated screening tools for depression.

9. What is the incidence of postpartum depression and name a good screening test for this.

Cases (examples, others possible):

A. Forty-five year old African American female, seen for the first time in your office complains of being "too tired all the time". T 36.7, P 60, BP 115 /78, R 18. This information is available on the chart before you enter the examining room.

Common causes include:

B. A 19-year old college sophomore complains of being "sleepy all the time". She recently flunked a chemistry final exam, and broke up with her boyfriend. She had a sore throat two weeks ago, but is otherwise well now.

Common causes include:

C. A 70-year old man brought in by his daughter because he "doesn't have any energy--he seems to sleep all day long and can't even do the garden work he loves so much".

Common causes include:

Recommended Readings

1. Armstrong, Carrie. Practice Guidelines. APA releases guideline on treatment of patients with major depressive disorder. Am Fam Phys, 2011 May 15;83(10):1219-1227.http://www.aafp.org/afp/2011/0515/p1219.html

2. Rosenthal, Thomas C. et al. Fatigue: An Overview. Am Fam Phys. 2008 Nov 15,78(10):1173-1179. http://www.aafp.org/afp/2008/1115/p1173.pdf

3. Norris, D. and Clark MS. Evaluation and Treatment of the Suicidal Patient. Am Fam Phys. 2012;85(6):602-605 http://www.aafp.org/afp/2012/0315/p602.pdf

4. U.S. Preventative Services Task Force. Screening for Depression in Adults: Recommendation Statement. Am Fam Physician. 2010 Oct 15;82(8):976-979.

5. Maurer, DM. Screening for Depression Am Fam Phys, 2012 Jan 15;85(2):139-144. http://www.aafp.org/afp/2012/0115/p139.html

6. Hirst, KP and Mountier, CY. Postpartum Major Depression. Am Fam Phys, 2010 Oct 15;82(8):926-933 http://www.aafp.org/afp/2010/1015/p926.pdf

Supplemental Readings/Websites

1. Beck AT, Beck RW. Screening Depressed Patients in Family Practice: A Rapid Technic. Postgraduate Med. 1972;81-85.

2. Stuart MR, Lieberman JA. The fifteen minute hour-applied psychotherapy for the primary care physician. 3rd ed. Connecticut: Praeger Publishers; 2002. pp. 112-147.

3. Lewis-Fernandez R, et al. Depression in US Hispanics: diagnostic and management considerations in Family Practice. J Am Board Fam Pract 2005;18:282-96.

Roche

V 0477

Beck Depression Inventory

CRTN: _____ CRF number: _____

Page 14 patient inits: _____

Baseline

BDI-II

Date:

Name: _____ Marital Status: _____ Age: _____ Sex: _____

Occupation: _____ Education: _____

Instructions: This questionnaire consists of 21 groups of statements. Please read each group of statements carefully, and then pick out the **one statement** in each group that best describes the way you have been feeling during the **past two weeks, including today**. Circle the number beside the statement you have picked. If several statements in the group seem to apply equally well, circle the highest number for that group. Be sure that you do not choose more than one statement for any group, including Item 16 (Changes in Sleeping Pattern) or Item 18 (Changes in Appetite).

1. Sadness

0 I do not feel sad.
1 I feel sad much of the time.
2 I am sad all the time.
3 I am so sad or unhappy that I can't stand it.

2. Pessimism

0 I am not discouraged about my future.
1 I feel more discouraged about my future than I used to be.
2 I do not expect things to work out for me.
3 I feel my future is hopeless and will only get worse.

3. Past Failure

0 I do not feel like a failure.
1 I have failed more than I should have.
2 As I look back, I see a lot of failures.
3 I feel I am a total failure as a person.

4. Loss of Pleasure

0 I get as much pleasure as I ever did from the things I enjoy.
1 I don't enjoy things as much as I used to.
2 I get very little pleasure from the things I used to enjoy.
3 I can't get any pleasure from the things I used to enjoy.

5. Guilty Feelings

0 I don't feel particularly guilty.
1 I feel guilty over many things I have done or should have done.
2 I feel quite guilty most of the time.
3 I feel guilty all of the time.

6. Punishment Feelings

0 I don't feel I am being punished.
1 I feel I may be punished.
2 I expect to be punished.
3 I feel I am being punished.

7. Self-Dislike

0 I feel the same about myself as ever.
1 I have lost confidence in myself.
2 I am disappointed in myself.
3 I dislike myself.

8. Self-Criticalness

0 I don't criticize or blame myself more than usual.
1 I am more critical of myself than I used to be.
2 I criticize myself for all of my faults.
3 I blame myself for everything bad that happens.

9. Suicidal Thoughts or Wishes

0 I don't have any thoughts of killing myself.
1 I have thoughts of killing myself, but I would not carry them out.
2 I would like to kill myself.
3 I would kill myself if I had the chance.

10. Crying

0 I don't cry anymore than I used to.
1 I cry more than I used to.
2 I cry over every little thing.
3 I feel like crying, but I can't.

Subtotal Page 1

Continued on Back

THE PSYCHOLOGICAL CORPORATION®
Harcourt Brace & Company
SAN ANTONIO
Orlando • Boston • New York • Chicago • San Francisco • Atlanta • Dallas
San Diego • Philadelphia • Austin • Fort Worth • Toronto • London • Sydney

0154018392
NR15645

11. Agitation

0 I am no more restless or wound up than usual.
1 I feel more restless or wound up than usual.
2 I am so restless or agitated that it's hard to stay still.
3 I am so restless or agitated that I have to keep moving or doing something.

12. Loss of Interest

0 I have not lost interest in other people or activities.
1 I am less interested in other people or things than before.
2 I have lost most of my interest in other people or things.
3 It's hard to get interested in anything.

13. Indecisiveness

0 I make decisions about as well as ever.
1 I find it more difficult to make decisions than usual.
2 I have much greater difficulty in making decisions than I used to.
3 I have trouble making any decisions.

14. Worthlessness

0 I do not feel I am worthless.
1 I don't consider myself as worthwhile and useful as I used to.
2 I feel more worthless as compared to other people.
3 I feel utterly worthless.

15. Loss of Energy

0 I have as much energy as ever.
1 I have less energy than I used to have.
2 I don't have enough energy to do very much.
3 I don't have enough energy to do anything.

16. Changes in Sleeping Pattern

0 I have not experienced any change in my sleeping pattern.
1a I sleep somewhat more than usual.
1b I sleep somewhat less than usual.
2a I sleep a lot more than usual.
2b I sleep a lot less than usual.
3a I sleep most of the day.
3b I wake up 1–2 hours early and can't get back to sleep.

17. Irritability

0 I am no more irritable than usual.
1 I am more irritable than usual.
2 I am much more irritable than usual.
3 I am irritable all the time.

18. Changes in Appetite

0 I have not experienced any change in my appetite.
1a My appetite is somewhat less than usual.
1b My appetite is somewhat greater than usual.
2a My appetite is much less than before.
2b My appetite is much greater than usual.
3a I have no appetite at all.
3b I crave food all the time.

19. Concentration Difficulty

0 I can concentrate as well as ever.
1 I can't concentrate as well as usual.
2 It's hard to keep my mind on anything for very long.
3 I find I can't concentrate on anything.

20. Tiredness or Fatigue

0 I am no more tired or fatigued than usual.
1 I get more tired or fatigued more easily than usual.
2 I am too tired or fatigued to do a lot of the things I used to do.
3 I am too tired or fatigued to do most of the things I used to do.

21. Loss of Interest in Sex

0 I have not noticed any recent change in my interest in sex.
1 I am less interested in sex than I used to be.
2 I am much less interested in sex now.
3 I have lost interest in sex completely.

3 4 5 6 7 8 9 10 11 12 A B C D E

_____ Subtotal Page 2

_____ Subtotal Page 1

_____ Total Score

Beck Depression Inventory - 2nd Edition

Purpose: Designed to determine presence and severity of symptoms of depression.

Population: Adolescents and adults.

Score: Produces single score indicating intensity of the depressive symptoms.

Time: 5-10 minutes, longer for patients with severe depression or obsessional disorders.

Author: Aaron T. Beck, Robert A. Steer, and Gregory K. Brown.

Publisher: the Psychological Corporation.

Description: The Beck Depression Inventory Second Edition (BDI-II) is a 21-item self-report instrument intended to assess the existence and severity of symptoms of depression as listed in the American Psychiatric Association's *Diagnostic and Statistical Manual of Mental Disorders* Fourth Edition (DSM-IV; 1994). This new revised edition replaces the BDI and the BDI-1A, and includes items intending to index symptoms of severe depression, which would require hospitalization. Items have been changed to indicate increases or decreases in sleep and appetite, items labeled body image, work difficulty, weight loss, and somatic preoccupation were replaced with items labeled agitation, concentration difficulty and loss of energy, and many statements were reworded resulting in a substantial revision of the original BDI and BDI-1A. When presented with the BDI-II, a patient is asked to consider each statement as it relates to the way they have felt for the past two weeks, to more accurately correspond to the DSM-IV criteria.

Scoring: Each of the 21 items corresponding to a symptom of depression is summed to give a single score for the BDI-II. There is a four-point scale for each item ranging from 0 to 3. On two items (16 and 18) there are seven options to indicate either an increase or decrease of appetite and sleep. Cut score guidelines for the BDI-II are given with the recommendation that thresholds be adjusted based on the characteristics of the sample, and the purpose for use of the BDI-II. Total score of 0-13 is considered minimal range, 14-19 is mild, 20-28 is moderate, and 29-63 is severe.

Reliability: BDI has been used for 35 years to identify and assess depressive symptoms, and has been reported to be highly reliable regardless of the population. It has a high coefficient alpha, (.80) its construct validity has been established, and it is able to differentiate depressed from non-depressed patients. For the BDI-II the coefficient alphas (.92 for outpatients and .93 for the college students) were higher than those for the BDI-1A (.8 6). The correlations for the corrected item-total were significant at .05 level (with a Bonferroni adjustment), for both the outpatient and the college student samples. Test-retest reliability was studied using the responses of 26 outpatients who were tested at first and second therapy sessions one week apart. There was a correlation of .93, which was significant at $p < .001$. The mean scores of the first and second total scores were comparable with a paired t (25)=1.08, which was not significant.

Validity: One of the main objectives of this new version of the BDI was to have it conform more closely to the diagnostic criteria for depression, and items were added, eliminated and reworded to specifically assess the symptoms of depression listed in the DSM-IV and thus increase the content validity of the measure. With regard to construct validity, the convergent validity of the BDI-II was assessed by administration of the BDI-1A and the BDI-II to two sub-samples of outpatients (N=191). The order of presentation was counterbalanced and at least one other measure was administered between these two versions of the BDI, yielding a correlation of .93 ($p<.001$) and means of 18.92 (SD = 11.32) and 21.888 (SD = 12.69) the mean BDI-II score being 2.96 points higher than the BDI-1A. A calibration study of the two scales was also conducted, and these results are available in the BDI-II manual. Consistent with the comparison of mean differences, the BDI-II scores are 3 points higher than the BDI-1A scores in the middle of the scale. Factorial Validity has been established by the inter-correlations of the 21 items calculated from the sample responses.

Norms: The normative sample included 500 outpatients from rural and suburban locations. All patients were diagnosed according to DSM-III-R or DSM-IV criteria were used to investigate the psychometric characteristics of BDI-II. The group was comprised of 63% women, and 37% men, the mean age was 37.20 years, range of 13-86 years. The racial/ethnic makeup was 91% White, 4% African American, 4% Asian American, and 1% Hispanic. A student sample of 120 college students in Canada served as a comparative normal group.

Suggested use: The BDI-II is intended to assess the severity of depression in psychiatrically diagnosed adults and adolescents 13 years of age and older. It is not meant to serve as an instrument of diagnosis, but rather to identify the presence and severity of symptoms consistent with the criteria of the DSM-IV. The authors warn against the use of this instrument as a sole diagnostic measure, as depressive symptoms may be part of other primary diagnostic disorders.

http://cps.nova.edu/~cpphelp/BDI2.html

Practice Guidelines

APA Releases Guideline on Treatment of Patients with Major Depressive Disorder

CARRIE ARMSTRONG

Am Fam Physician. 2011 May 15;83(10):1219-1227.

Guideline source: American Psychiatric Association

Evidence rating system used? Yes

Literature search described? Yes

Available at: http://www.psychiatryonline.com/pracGuide/pracGuideTopic_7.aspx

The American Psychiatric Association (APA) recently updated its guideline on the treatment of major depressive disorder. The new evidence-based guideline summarizes recommendations on the use of antidepressants and other drug therapies; psychotherapy, including cognitive behavior therapy; and electroconvulsive therapy (ECT). Because many patients with major depressive disorder have co-occurring psychiatric disorders, including substance use disorders, physicians should also consider appropriate treatments for these diagnoses. Patients who have depressive symptoms in the context of another disorder but who do not meet the diagnostic criteria for major depressive disorder should be treated according to guidelines pertaining to the primary diagnosis.

Acute Phase

Treatment in the acute phase should be aimed at inducing remission of the depressive episode and achieving a full return to the baseline level of functioning. Patients with mild to moderate depression should be treated with antidepressants *(Table 1)* or psychotherapy. Combined pharmacotherapy and psychotherapy may be useful in patients with psychosocial or interpersonal problems, intrapsychic conflict, or a co-occurring axis II disorder. ECT can be used in select patients.

TABLE 1.
Medications for Treatment of Major Depressive Disorder

Drug	*Starting dosage (mg per day)**	*Usual dosage (mg per day)*
Dopamine-norepinephrine reuptake inhibitors‡		
Bupropion, immediate release (Wellbutrin)	150	300 to 450
Bupropion, sustained release (Wellbutrin SR)	150	300 to 400
Bupropion, extended release (Wellbutrin XL)	150	300 to 450
Monoamine oxidase inhibitors		
Isocarboxazid	10 to 20	30 to 60

Drug	*Starting dosage (mg per day)**	*Usual dosage (mg per day)*
Moclobemide (not available in the United States)	150	300 to 600
Phenelzine (Nardil)	15	45 to 90
Selegiline, transdermal (Emsam)	6	6 to 12
Tranylcypromine	10	30 to 60
Norepinephrine-serotonin modulator‡		
Mirtazapine (Remeron)	15	15 to 45
Selective serotonin reuptake inhibitors‡		
Citalopram (Celexa)	20	20 to 60§
Escitalopram (Lexapro)	10	10 to 20
Fluoxetine (Prozac)	20	20 to 60§
Paroxetine (Paxil)	20	20 to 60§
Paroxetine, extended-release (Paxil CR)	12.5	25 to 75
Sertraline (Zoloft)	50	50 to 200§
Serotonin modulators		
Nefazodone	50	150 to 300
Trazodone‖	150	150 to 600
Serotonin-norepinephrine reuptake inhibitors‡		
Desvenlafaxine (Pristiq)	50	50
Duloxetine (Cymbalta)	60	60 to 120
Venlafaxine, immediate release (Effexor)	37.5	75 to 375
Venlafaxine, extended release (Effexor XR)	37.5	75 to 375
Tricyclics and tetracyclics		
Amitriptyline	25 to 50	100 to 300
Desipramine (Norpramin)	25 to 50	100 to 300
Doxepin	25 to 50	100 to 300
Imipramine (Tofranil)	25 to 50	100 to 300
Maprotiline	75	100 to 225
Nortriptyline (Pamelor)	25	50 to 200
Protriptyline	10 to 20	20 to 60
Trimipramine (Surmontil)	25 to 50	75 to 300

*—*Lower starting dosages are recommended for older patients and for patients with panic disorder, anxiety, hepatic disease, and co-occurring medical conditions*.

†—*For some drugs (e.g., tricyclics), the upper dosage limit reflects the risk of toxicity or need for plasma level assessment, whereas for other drugs (e.g., selective serotonin reuptake inhibitors), higher dosages are safe but have not been proven more effective than lower dosages*.

‡—*These drugs are likely optimal in terms of safety, adverse effects, and quantity and quality of clinical trial data*.

§—*Dosage varies with diagnosis*.

‖—*Not typically used for this indication*.

Adapted with permission from American Psychiatric Association. Treatment of patients with major depressive disorder. 3rd ed. http://www.psychiatryonline.com/pracGuide/pracGuideTopic_7.aspx. Accessed January 27, 2011.

In patients with severe depression without psychotic features, pharmacotherapy, combined pharmacotherapy and psychotherapy, or ECT can be used; however, psychotherapy should not be used alone. In patients with severe depression with psychotic features, antidepressant and antipsychotic agents should be used, with or without psychotherapy. ECT is also an option.

Selection of an initial treatment modality should be influenced by clinical features, such as severity of symptoms and presence of co-occurring disorders, as well as other factors, such as patient preferences and prior treatment experiences. Because the effectiveness of antidepressants is generally comparable between and within drug classes, the initial selection will be based largely on anticipated adverse effects, safety and tolerability, pharmacologic properties (e.g., half-life, drug interactions), and cost. For most patients, optimal treatments include a selective serotonin reuptake inhibitor, a serotonin-norepinephrine reuptake inhibitor, mirtazapine (Remeron), or bupropion (Wellbutrin). The use of nonselective monoamine oxidase inhibitors should be restricted to patients who do not respond to other treatments. In patients who prefer complementary and alternative therapies, *S*-adenosylmethionine (SAM-e) or St. John's wort can be considered. However, patients who take St. John's wort should be monitored carefully for drug interactions.

Once an antidepressant has been selected, it should be titrated based on the patient's age, the treatment setting, and the presence of co-occurring disorders, concomitant pharmacotherapy, or adverse effects of medication. If adverse effects occur, the dosage can be lowered or the patient should be switched to a different medication.

An incomplete response to treatment is associated with poor functional outcomes; therefore, the acute phase of treatment should not be concluded prematurely in patients who do not fully respond. If a moderate improvement in symptoms does not occur within four to eight weeks after treatment initiation, the diagnosis should be reconsidered, adverse effects and adherence to therapy assessed, comorbidities and psychosocial factors reviewed, and the treatment plan adjusted. For patients who are being treated with psychotherapy, the frequency of sessions and the specific approach to psychotherapy should be reassessed. If minimal or no improvement is noted after an additional four to eight weeks, the treatment plan should be readjusted, and consultation should be considered.

Continuation Phase

In the continuation phase, management is aimed at preventing relapse. Systematic assessment of symptoms and monitoring for adverse effects of medications *(Table 2)*, adherence to therapy, and functional status are essential. To reduce the risk of relapse, patients in whom pharmacotherapy has been successful should continue treatment at the same dosage for four to nine months. Depression-focused cognitive behavior therapy is also recommended in the continuation phase.

TABLE 2.
Treatment of Adverse Effects Associated with Antidepressants

Effect	*Associated antidepressant*	*Treatment*
Anticholinergic		
Constipation	TCAs	Adequate hydration; bulk laxative
Delirium	TCAs	Assess for other causes
Dry mouth	TCAs, SNRIs, bupropion (Wellbutrin)	Use of sugarless gum or candy
Urinary hesitancy	TCAs	Bethanechol
Visual changes	TCAs	Pilocarpine eye drops
Cardiovascular		
Arrhythmias	TCAs	Avoid TCA use in patients with cardiac instability or ischemia; attend to interactions with antiarrhythmic drugs
Hypertension	SNRIs, bupropion	Monitor blood pressure; keep dosage as low as possible; add antihypertensive drug
Hypertensive crisis	MAOIs	Seek emergency treatment; if hypertension is severe, intravenous antihypertensive agents (e.g., labetalol, nitroprusside [Nitropress]) may be needed
Increased cholesterol levels	Mirtazapine (Remeron)	Statin drugs
Orthostatic hypotension	TCAs, trazodone, nefazodone, MAOIs	Fludrocortisone; add salt to diet
Neurologic		
Headache	SSRIs, SNRIs, bupropion	Assess for other causes (e.g., caffeinism, bruxism, migraine, tension headache)
Myoclonus	TCAs, MAOIs	Clonazepam (Klonopin)
Seizures	Bupropion, TCAs, amoxapine	Assess for other causes; add anticonvulsant drug, if indicated
Sexual		
Arousal, erectile dysfunction	TCAs, SSRIs, SNRIs	Sildenafil (Viagra), tadalafil (Cialis), buspirone (Buspar), bupropion
Orgasm dysfunction	TCAs, SSRIs, venlafaxine, desvenlafaxine, MAOIs	Sildenafil, tadalafil, buspirone, bupropion
Priapism	Trazodone	Obtain emergency urologic evaluation
Other		
Activation	SSRIs, SNRIs, bupropion	Administer in morning
Akathisia	SSRIs, SNRIs	Beta blocker or benzodiazepine
Bruxism	SSRIs	Obtain dental consultation, if indicated

Effect	*Associated antidepressant*	*Treatment*
Diaphoresis	TCAs, some SSRIs, SNRIs	Alpha $_1$-adrenergic antagonist, central alpha$_2$-adrenergic antagonist, or anticholinergic
Fall risk	TCAs, SSRIs	Monitor blood pressure for evidence of hypotension or orthostasis; assess for sedation, blurred vision, or confusion; modify environment to reduce risk
Gastrointestinal bleeding	SSRIs	Determine whether other medications may affect clotting
Hepatotoxicity	Nefazodone	Provide education about and monitor for evidence of hepatic dysfunction; order hepatic function testing, if indicated
Insomnia	SSRIs, SNRIs, bupropion	Administer in morning; add sedative-hypnotic drug at bedtime; add melatonin; provide cognitive behavior therapy or sleep hygiene education
Nausea, vomiting	SSRIs, SNRIs, bupropion	Administer after a meal or in divided doses
Osteopenia	SSRIs	Monitor bone mineral density and treat, if indicated (e.g., calcium and vitamin D supplement, bisphosphonates, selective estrogen receptor agents)
Sedation	TCAs, trazodone, nefazodone, mirtazapine	Administer at bedtime; add modafinil (Provigil) or methylphenidate (Ritalin)
Severe serotonin syndrome	MAOIs	Obtain emergency evaluation; consider admission to a critical care unit
Weight gain	SSRIs, mirtazapine, TCAs, MAOIs	Encourage exercise; consult with dietician; if changing antidepressants, consider a secondary amine (if a TCA is required) or antidepressant with less effect on weight (e.g., bupropion)

MAOI = monoamine oxidase inhibitor; SNRI = serotonin-norepinephrine reuptake inhibitor; SSRI = selective serotonin reuptake inhibitor; TCA = tricyclic antidepressant.

Adapted with permission from American Psychiatric Association. Treatment of patients with major depressive disorder. 3rd ed. http://www.psychiatryonline.com/pracGuide/pracGuideTopic_7.aspx. Accessed January 27, 2011.

Patients who respond to ECT should continue treatment with medication; a combination of lithium and nortriptyline (Pamelor) is recommended. Alternatively, continuation ECT can be given, especially if medication and psychotherapy have been ineffective.

Maintenance Phase

Patients who have had three or more episodes of major depression or who have chronic major depressive disorder should proceed to the maintenance phase of treatment after completing the continuation phase. Maintenance therapy should also be considered for patients with additional risk factors for recurrence

(e.g., residual symptoms, ongoing psychosocial stressors, early age at onset). Additional considerations include patient preference, the type of treatment received, adverse effects, comorbid conditions, frequency and severity of previous depressive episodes (including psychosis and suicide risk), and the persistence of depressive symptoms after recovery. In many patients—particularly those with chronic and recurrent major depressive disorder or co-occurring medical or psychiatric disorders—some form of treatment will be required indefinitely. Because of the risk of recurrence, patients should be monitored at regular intervals during the maintenance phase.

The antidepressant that produced symptom remission during the acute phase should be continued at the full therapeutic dosage. If depression-focused psychotherapy was used during the acute and continuation phases, maintenance therapy should be considered, with less frequent sessions. Maintenance ECT can be considered in patients with depressive episodes that have not responded to medications or depression-focused psychotherapy, but that have responded to ECT.

Discontinuation

Pharmacotherapy should be tapered over the course of at least several weeks. Before discontinuation of active treatment, patients should be counseled about the potential for relapse, and a plan should be established for seeking treatment if symptoms recur. Patients should be monitored for several months after medications are discontinued, and they should receive another course of acute-phase treatment if symptoms recur.

HEADACHE

Learning Objectives

At the ending of the case discussion, the student should be able to:

1. Define "primary" and "secondary" headache.

2. Common and Severe/Life Threatening Diagnoses.

Some Examples of Common and Severe/Life Threatening Causes of Headache

	Common Causes	Severe/Life Threatening
Child/Adolescent	migraine headaches tension headaches	neoplasm congenital malformation
Adults	migraine headaches tension headaches cluster headaches caffeine withdrawal	cancer intracranial bleed meningitis stroke temporal arteritis pseudotumor cerebri

3. Discuss the differential historical features and physical findings for the three "classic" types of primary headache.

7. Systematically organize the major categories of secondary headaches, utilizing age, historical information and physical findings.

8. List warning symptoms of headaches that are associated with significant underlying disease.

9. Describe symptoms that are concerning in pediatric headaches.

10. List challenges that present when managing headaches in older patients.

11. List acute treatment for primary headaches, and prevention using pharmacologic agents, diet, and lifestyle changes.

12. List 3 categories of further studies that may help to determine the cause of secondary headache.

13. List complementary therapies that may help alleviate tension headaches.

Recommended Readings

1. Pust RE. Headache: basic diagnostic categories. 2000.

2. Potentially dangerous headaches: Their diagnosis and treatment. Chart. R.Pust.

3. Gilmore, B et al. Treatment of Acute Migraine Headache. Am Fam Phys. 2011 Feb 1;83(3):271-280. http://www.aafp.org/afp/2011/0201/p271.html

4. Hainer HL and Matheson. Approach to Acute Headache in Adults- Am Fam Phys 2013 May 87(10)682-687http://www.aafp.org/afp/2013/0515/p682.html

5. AAN/AHS Update Recommendations for Migraine Prevention in Adults Am Fam Phys. 2013 Apr 15;87(8):584-585. http://www.aafp.org/afp/2013/0415/p584.html

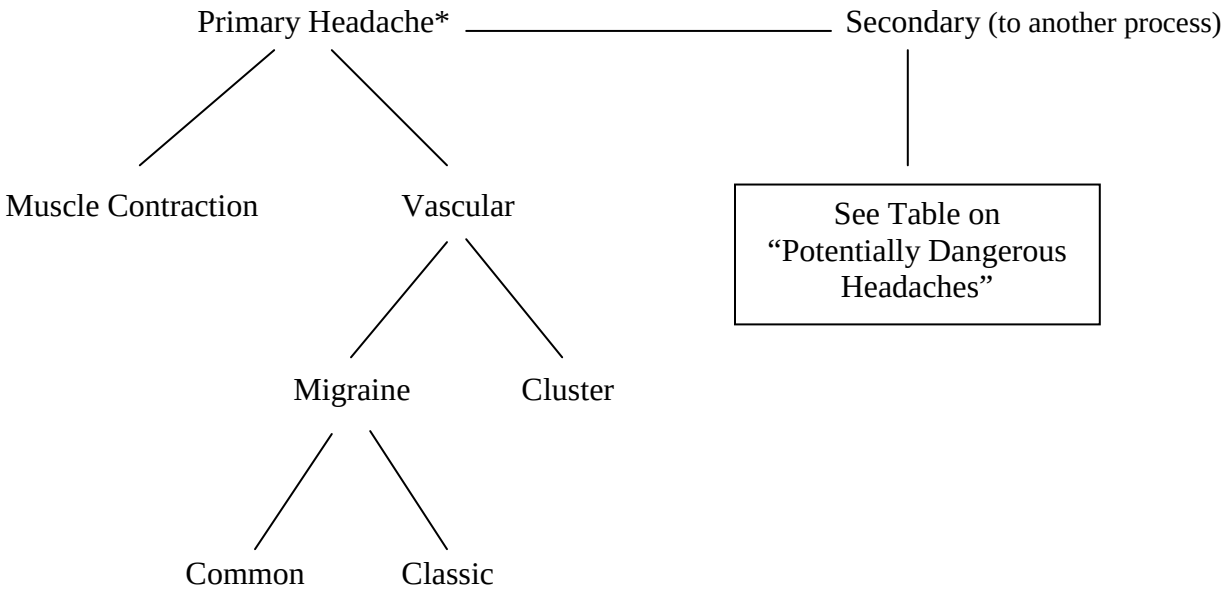
6. Neff, Matthew J. Practice Guidelines. Evidence-Based Guidelines for Neuroimaging in Patients with Nonacute Headache. Am Fam Phys 2005 71(6)1219-22 http://www.aafp.org/afp/2005/0315/p1219.html

7. Pickett, H and Blackwell JC Acupuncture for Migraine Headaches - Am Fam Phys 2010 81(8) 1036-1037 http://www.aafp.org/afp/2009/0901/p481.html

8. Blume, HK, Pediatric Headache: A Review. Peds in review 2012 33 (12) 582 http://pedsinreview.aappublications.org/content/33/12/562.full.pdf

9. Yancy, JR et.al. Chronic Daily Headache: Diagnosis and Management Am Fam Phys 2014;89(8) 642-649 http://www.aafp.org/afp/2014/0415/p642.pdf

Headache
Basic Diagnostic Categories



*In some cases, patients may have a combination of causes/types.

Pust R. 2000.

Vaginal Bleeding

Learning Objectives

At the end of the case discussion the students should be able to:

1. Elicit an accurate menstrual history

2. Gather appropriate GYN history

3. Identify a differential diagnosis for vaginal bleeding based on trimester of pregnancy.

4. Recognize abnormal bleeding patterns and create a differential for abnormal ovulatory vs anovulatory bleeding

    a. Describe appropriate clinical, laboratory, and radiologic evaluations

    b. Discuss treatment options for each

Recommended Reading

Sloane, PD, Slatt, LM, Ebell, MH, Jacques, LB & Smith, MA (2011) *Essentials of Family Medicine* (6th edition) Baltimore, MD: Lippincott, William & Wilkens

VISUAL DIFFICULTY/RED EYE

Learning Objectives

After reviewing the readings and after the didactic session, the student will be able to:

1. Identify which patient populations should be screened for visual impairment; Differentiate myopia, hyperopia, presbyopia and astigmatism on visual acuity exam.

2. Discuss briefly the care and hazards of contact lenses.

3. Review key components of the "concentric" external eye exam in a patient with eye complaints.

4. List four common, yet anatomically and pathophysiologically very distinct causes of the red eye as seen in family/primary care practice.

5. Differentiate these four eye diseases on the bases of:

   a. relative frequency (incidence, prevalence).

   b. risk factors: age, occupation, predisposing disease.

   c. anatomic site in the eye and basic pathophysiology.

   d. distinguishing clinical features; e.g., visual acuity; pain; photophobia; discharge; appearance of conjunctive, cornea and pupil; pupil size and light response, intraocular pressure, corneal fluorescein staining.

   e. Medications, modalities, and precautions used in primary care of these conditions.

6. Specify which of these acute red eye diseases are typically managed by:

   a. family physician or other primary care clinicians.

   b. conjointly by family physician and ophthalmologist.

c. ophthalmologist

7. List eye emergencies in which referral to an ophthalmologist is mandatory.

8. List 5 important causes of vision loss in the elderly; describe complications which can arise from low vision in this population.

Recommended Readings

1. Pust RE and Snyder RW (eds.) The Acute Red Eye-(Table).

2. Eye Anatomy: Superior/transverse view of right eye and orbit.

3. Cronau, H. et. al., Diagnosis and Management of Red Eye in Primary Care. Am Fam Phys 2010 81(2) 137-44 http://www.aafp.org/afp/2010/0115/p137.html

4. Wipperman, JL and Dorsch, JN. Evaluation and Management of Corneal Abrasions - January 15, 2013 – Am Fam Phys. 2013 87(2) 114-120 http://www.aafp.org/afp/2013/0115/p114.html

5. Gelston CD, Common Eye Injuries. Am Fam Physician. 2013 Oct 15;88 (8):515-519. http://www.aafp.org/afp/2013/1015/p515.html

6. Fiore, D.C. et al. Pain int the Quiet (Not Red) Eye. Am Fam Phys. 2010 82(1) 69-73 http://www.aafp.org/afp/2010/0701/p69.pdf

7. Screening for Impaired Visual Acuity in Older Adults: Recommendation Statement http://www.aafp.org/afp/2011/0115/p185.pdf

8. The Red Eye: a Pictorial Catalogue PowerPoint

9. Flouroscein dye exam of cornea [47 sec. video] www.youtube.com/watch?v=SkxMqtXcU6Q

Supplemental Readings/Websites

1. Control of Communicable Diseases Manual/ 18th ed; 2004. (Conjunctivitis/keratitis) pp.124-133.

The Red Eye
EPIDEMIOLOGY, DIFFERENTIAL DIAGNOSIS, TREATMENT, REFERRAL

(adapted by R.E. Pust, MD and R.W. Snyder, MD)

* = Prominent Distinguishing (Differentiating) Features

RED EYE CAUSE

FEATURES/ FINDINGS	CONJUNCTIVITIS (esp. bacterial)	IRITIS (acute)	CORNEAL DAMAGE or KERATITIS	GLAUCOMA (acute angle closure)
⊙ Relative Frequency	Very common	Fairly common	Common	Uncommon
⊙ Risk Factors: age	All, esp. young	All	All	Often >40
occupation	Child care, etc.	--	Chemicals, foreign bodies	--
predisposing diseases	--	Autoimmune; granulomatous	steroid drops herpes (HSV 1)	Family history?
⊙ Anatomic Site	Conjunctiva (eye lid & globe)	Uveal tract (incl. iris)	Cornea	Angle of Schlemm
⊙ Basic Patho-physiology	Purulent superficial infection	Inflammatory response, many causes	Epithelial disruption ulceration	Obstruction, pressure
⊙ Vision	Normal	Blurred	Blurred (may be normal early)	Marked blurring; "halos" in some pts.
⊙ Pain	None	Moderately severe; intermittent stabbing	Moderate to severe; * sharp, foreign body sensation	Very severe; sometimes nausea and vomiting
⊙ Photophobia	None	Moderate or severe	Moderate	Moderate
⊙ Discharge	* Usually significant ± crusting of lashes	None	None to mild	None
⊙ Conjunctival Injection	* Diffuse (but may be mild, early)	* Circumcorneal (surrounding the cornea)	Circumcorneal (if present)	Diffuse
⊙ Appearance of Cornea	Clear	Clear	Cloudy (may be clear, early)	Cloudy "Steamy"
⊙ Pupil Size	Normal	* Constricted	Normal	* Dilated
⊙ Intraocular Pressure	Normal: (do not measure with discharge present)	Normal or low	Normal	* Elevated
⊙ Corneal Fluorescein Staining	Absent	Absent	* Focal (trauma) or diffuse (early keratitis)	Absent
⊙ Basic treatment in primary care	Local antibiotic, e.g. sulfacetamide, (no steroids)	Refer for cycloplegics and steroids	Local antibiotic; eye patch; see next day NO STEROIDS	Emergency referral; no steroids
⊙ Ophthalmology referral if/for:	No response to Rx or decreasing vision	Initial Rx; periodic follow-up	Embedded foreign body; enlarging or herpes ulcer; hyphema, etc.	All cases of acute glaucoma

ALWAYS: 1. Measure (and record on chart) visual acuity (before you begin examination) via office nurse
2. Consult/refer for: decreasing vision, increasing severe pain/photophobia circumcorneal injection, anisocoria, "hard eyeball", "steamy" cornea, herpes, hyphema, and as noted in above table, or if unsure of diagnosis.

THIS TABLE IS AN INITIAL GUIDE ONLY; IT DOES NOT REPLACE STANDARD TEXTBOOKS OR INDICATED OPHTHALMOLOGY CONSULTATION.

It is adapted from material presented in:

1. Snyder RW. A practical approach to the red eye. In: Syllabus for Primary Care update CME Course, University of Arizona, College of Medicine, April 1991, pp. 119-125.

UPPER RESPIRATORY INFECTIONS

APPROPRIATE USE OF ANTIBIOTICS

Learning Objectives:

The Common Cold

1. Describe the signs and symptoms.

2. Understand the epidemiology.

3. Describe the transmission.

4. Discuss symptomatic treatment.

Sinusitis

5. Differentiate between viral and bacterial sinusitis.

6. Recognize signs and symptoms of secondary bacterial sinusitis.

7. Review treatment choices for sinusitis.

Bronchitis

8. Describe the diagnosis and treatment of acute uncomplicated bronchitis.

Influenza

9. Differentiate influenza from the common cold.

10. Discuss influenza vaccine and recommendation.

Pharyngitis

11. Describe the classical differences between sore throat caused by Group A Strep (GAS) and other causes.

12. Understand the goal of treatment of GAS pharyngitis.

13. List antibiotics that are effective in treating Strep.

14. Discuss the role of Strep Culture and Rapid Antigen Detection Testing (RADT) in the treatment of strep-pharyngitis.

15. Generate and carry out an evidence based medicine search on a diagnostic or treatment question raised during this session.

    A diagnostic question should identify a gold standard and address the sensitivity and specificity of the test in question.
    A treatment question should be phrased in the form of a PICO (population, intervention, comparison, and outcome). Find the best available, relevant, and valid evidence to answer the question.
    Students can use their search engine of choice. Possibilities include the AHSL EBM Search or Dynamed.

TABLE 4 -- Recommendations for antimicrobial therapy for group A streptococcal pharyngitis.			
Route of administration, antimicrobial agent	**Dosage**	**Duration [a]**	**Rating**
Oral			
Penicillin V [b]	Children: 250 mg b.i.d. or t.i.d.	10 days	A-II
	Adolescents and adults: 250 mg t.i.d. or q.i.d.	10 days	A-II
	Adolescents and adults: 500 mg b.i.d.	10 days	C-III
Intramuscular			
Benzathine penicillin G	1.2×10^6 U	1 dose	A-II [c]
	6.0×10^5 U	1 dose [d]	A-II
Mixtures of benzathine and procaine penicillin G	Varies with formulation [e]	1 dose	B-II
Oral, for patients allergic to penicillin			
Erythromycin	Varies with formulation [f]	10 days	A-II
First-generation cephalosporins [g]	Varies with agent	10 days	A-II

[a] Although shorter courses of azithromycin and some cephalosporins have been reported to be effective for treating group A streptococcal upper respiratory tract infections, evidence is not sufficient to recommend these shorter courses for routine therapy at this time.
[b] Amoxicillin is often used in place of oral penicillin V for young children; efficacy appears to be equal. The choice is primarily related to acceptance of the taste of the suspension.
[c] See the discussion of benzathine penicillin G therapy in Management of Group A Streptococcal Pharyngitis.
[d] For patients who weigh <27 kg.
[e] Dose should be determined on basis of the benzathine component. For example, mixtures of $9 \times 10_5$ U of benzathine penicillin G and $3 \times 10_5$ U of procaine penicillin G contain less benzathine penicillin G than is recommended for treatment of adolescents or adults.
[f] Available as stearate, ethyl succinate, estolate, or base. Cholestatic hepatitis may rarely occur in patients, primarily adults, receiving erythromycin estolate; the incidence is greater among pregnant women, who should not receive this formulation.

Taken from Practice guidelines for the diagnosis and management of Group A streptococcal pharyngitis by the Infectious Disease Society of America.

Recommended Readings

1. Albert RH. Diagnosis and Treatment of Acute Bronchitis. Am Fam Physician. 2010 Dec 1;82(11):1345-1350. http://www.aafp.org/afp/2010/1201/p1345.html
2. Choby BA. Diagnosis and Treatment of Streptococcal Pharyngitis. Am Fam Phys. Mar 1 09 79(5) 383-390 http://www.aafp.org/afp/20090301/383.pdf
3. Zoorob, et al. Antibiotic Use in Acute Upper Respiratory Tract Infections Am Fam Phys 2012 Nov 1 86(9) 817- 822 http://www.aafp.org/afp/2012/1101/p817.html
4. Lindell A, Kelsberg G. FPIN's Clinical Inquiries. Antibiotics for Viral Upper Respiratory Tract Infections in Children. Am Fam Phys. 2011 Mar 15;83(6):747-752. http://www.aafp.org/afp/2011/0315/p747.html
5. Practice Guidelines: IDSA Releases Guidelines for Management of Acute Bacterial Rhinosinusitis Am Fam Phys. 2013 Mar 15; 86(2):153-159 http://www.aafp.org/afp/2013/0315/p445.html
6. Jashner, J. et.al. Treatment of the Common Cold in Children and Adults Am Fam Phys. 2012 Jul 15 ; 87(6):445-449 http://www.aafp.org/afp/2012/0715/p153.html
7. Centor RM, Samlowski R. Avoiding Sore Throat Morbidity and Mortality: When Is It Not "Just a Sore Throat?" Am Fam Physician. 2011 Jan 1;83(1):26-28. http://www.aafp.org/afp/2011/0101/p26.html
8. Kline, Jerome O. Is Acute Otitis Media a Treatable Disease? N Engl J Med 2011 Jan 13;364:2 168-169. http://www.aafp.org/afp/2011/0101/p26.html

Supplemental Readings/Websites

1. Livingston, C. et. al. Treatments for Symptoms of the Common Cold. Am Fam Physician. Dec 15;88(12)online. http://www.aafp.org/afp/2013/1215/od3.html

Preventive topic 1:

DIAGNOSING AND PREVENTING ILLNESS -

THE CONTINUUM IN FAMILY PRACTICE

The ***required*** key (*and free!*) resource for Clinical Prevention in the FCM clerkship (and for all US clinicians) is ePSS. You need to download the electronic Preventive Services Selector (ePSS), to your mobile device. Just "google" ePSS to bring up links from which you can download the app for your particular device. This app identifies which preventive services are appropriate for each of your patients.

For more information about the Guide and other Task Force resources, visit:
www.uspreventiveservicestaskforce.org

Learning Objectives

By the end of this clerkship, utilizing specific "chief complaints" and patient/population examples, each student should be able to:

1. *Manage, [from a clinical/epidemiologic perspective,] patient-care encounters across the* family-practice spectrum, from diagnosis to case-finding to screening. (This will be illustrated by an actual case)

2. Review briefly Sensitivity, Specificity, disease Prevalence (in relevant population of "patients") and Predictive Value of positive (+PV) finding. Compare to Likelihood Ratio. (See Required reading No. 2.)

3. Relate the three terms in Objective 2 (above) to diagnostic thinking (Bayesian problem-solving) in primary care, comparing and contrasting to diagnostic thinking in sub-specialty clinic populations. Sensitively and specificity of the test or finding do not change. But prevalence varies widely across specialties and patient populations.

4. Extend this "diagnostic" continuum to "case-finding" and to "preventive screening" in the population served by the clinic in this session AND at the students' clerkship site.

In Objectives 5-7, we will review three concepts, each consisting of 3 aspects.

5. Describe 3 levels of preventive intervention in the pathogeneses of a disease over time, providing specific examples.

6. List 3 major sources of clinical prevention guidelines, comparing the "aggressiveness" of their recommendations
   1.) USPSTF (used in Family Medicine and primary care) is the most evidenced based
   2.) Medical specialty organizations e.g. ACOG, cardiology, urology.
   3.) Disease-specific voluntary organizations. (e.g. Am. Lung Association, Susan Komen (most aggressive.)

7. Identify the 3 major methods a physician should use in preventing disease. All three are evaluated by the U.S. Preventive Services Task Force, including ePSS, the free USPSTF "app."

8. Review six criteria for judging the value of screening tests (three related to the disease and three related to the test.) This objective (and this prevention overview section) should be a review, integrating concepts from the "Evidence Based Medicine" thread of your ArizonaMed pre-clinical curriculum

Required Readings

1. https://itunes.apple.com/us/app/ahrq-epss/id311852560?mt=8 ePSS, the electronic Preventive Service Selector, is a free "app," based directly on USPSTF. You enter patient age and sex; it reads out USPSTF recommendations for that patient.

2. Pust R. et. al "Working Clinically" in *Essential Clinical Global Health*. Wiley 2015 pp. 10-11 (in syllabus) *Be able to explain and use clinically the 3 figures. Case examples are from global health but are applicable to diagnosis anywhere.*

3. Ubell PA, and Jagsi, R. Promoting Population Health through Financial Stewardship. N Engl J Med 2014 Apr 3;370(14):1280-1. http://www.ncbi.nlm.nih.gov/pubmed/24693887

Supplemental Readings or Web Sites

1. U.S. Preventive Services Task Force. Available at: http://www.ahrq.gov/clinic/uspstf.htm

2. https://subscriptions.ahrq.gov/service/subscribe.html?code=USAHRQ_7 (email list serv; you can get on this listserv by sending an email to this address; you will get updates on USPSTF, clinical guidelines and other links).

4. McGee S. Evidence-based physical diagnosis. Elsevier, 2012 (3rd edition of this excellent analysis of the value of each maneuver in the physical examination) Available as an e-book via AHSL.

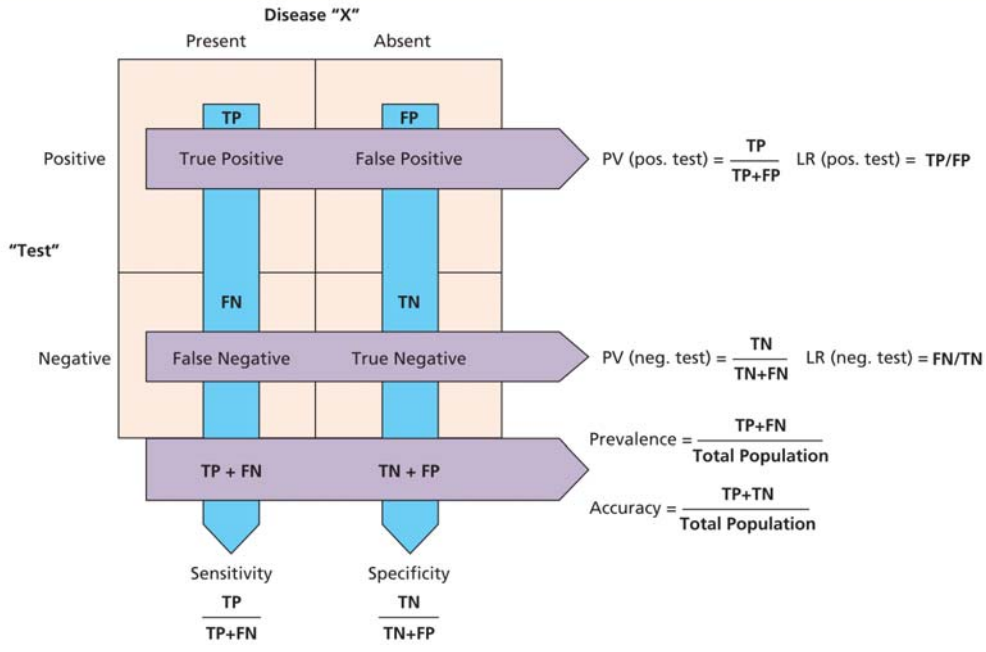


Figure 1.3 Two-by-two table on the relationship between test and disease: the basic concepts of clinical diagnosis in all settings. TP, true positive; TN, true negative; FP, false positive; FN, false negative; PV, predictive value. Likelihood ratio (LR) can also be computed from any such two-way table: LR of a positive test or finding = TP/FP; LR of a negative test = FN/TN. A positive high-specificity test tends to "rule in" the suspected diagnosis (remembered as SpIn+). A negative high-sensitivity test tends to "rule out" the suspected diagnosis (remembered as SnOut–).

Interpreting clinical findings in the context of the local epidemiology

The classic triad of time, place, and person (i.e., patient demographics) determine to a great extent the relative prevalence of disease. The fact that Sara was a child and from a malaria-prevalent area increased the risk that she had clinical malaria (Taylor *et al.*, 2010). These epidemiological findings must be considered when estimating her pre-test probability of any specific disease, such as malaria (Richardson, 1999). Additional diagnostic tools are then used to generate a **likelihood ratio**, which is the ratio of true positives to false positives of any clinical finding ("test") for the disease being considered, in this case malaria. The Fagan nomogram (Figure 1.4), or the equivalent in hand-held software, can be used to calculate the post-test probability of that disease. The red and green lines in Figure 1.4 demonstrate these concepts. While experienced clinicians are not formally completing this analysis with each patient test, the foundation of their veteran decision-making is often based on this thoughtful, data-driven approach.

In the context of a high post-test probability for malaria, most clinicians would advise treatment (Davey, 2001; Simoes *et al.*, 2003). However, the implications of a false-positive diagnosis, leading to inappropriate treatment, must also be considered (Chandler *et al.*, 2008). In the case of Sara, this would unnecessarily expose Sara to the risks of antimalarial medications and, more importantly, delay the diagnosis and treatment of her actual disease.

Any individual physical finding may not have significant sensitivity or specificity for clinical malaria (Bisoffi & Buonfrate, 2013). Splenomegaly, for example, may be absent (falsely negative) in a child's first few attacks of malaria, and these are the cases most likely to be fatal. Since many children (often 50%) in endemic communities have enlarged spleens from prior malaria episodes, there is little correlation between splenomegaly and **current** clinical malaria, thereby lowering the likelihood ratio of splenomegaly for the diagnosis of current clinical malaria (Hackett, 1944; WHO, 2012). Therefore, in the example in Figure 1.4, if the positive likelihood ratio of splenomegaly for current clinical malaria is approximately 2, the post-test probability is raised only modestly, to 67% (red line).

Considering "clusters" of clinical findings or syndromes

Since any one given physical finding may not yield a high likelihood ratio for a specific disease, a skilled clinician will use a combination of findings in the patient's history and physical examination to quickly limit the differential diagnosis. When

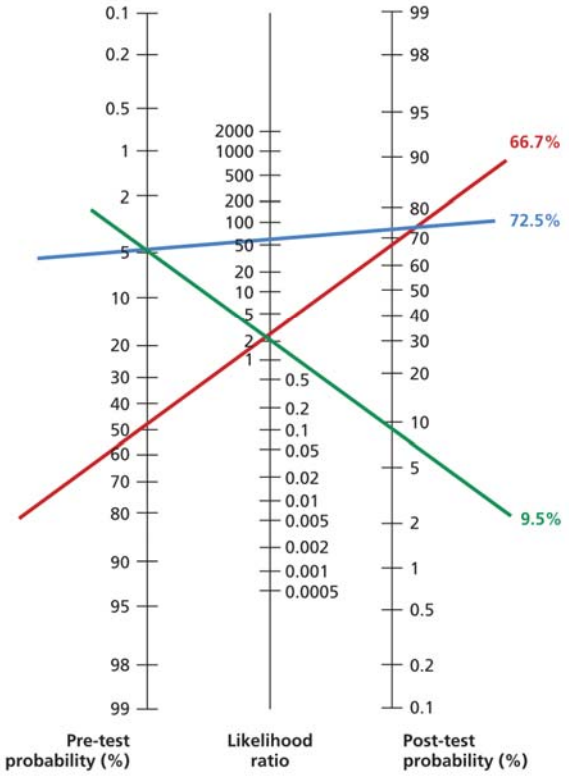


Figure 1.4 Fagan nomogram demonstrating the relationship between pre-test probability, likelihood ratio, and post-test probability (see Figure 1.3 for the definition of likelihood ratio). Many diagnostic calculations, including those in this chapter, are available on several smartphone apps, including MedCalc (www.medcalc.com/bayes.html). Alternately, in the field, one can use the Fagan nomogram and a straight edge. This nomogram, often used for laboratory tests, can also be used to conceptualize clinical decision-making. The red and green lines represent two individual patients who each present with a single clinical finding suggestive of a particular disease. The likelihood ratio is arbitrarily 2 in these examples. However, it is only the patient who comes from a setting where this disease is prevalent (high pre-test probability, red line) that is likely to have that disease. The blue line demonstrates that the presence of multiple or convincing clinical findings for a particular disease (arbitrarily, here, a likelihood ratio of 50) greatly increases the post-test probability of that disease, even in the context of low pre-test probability.

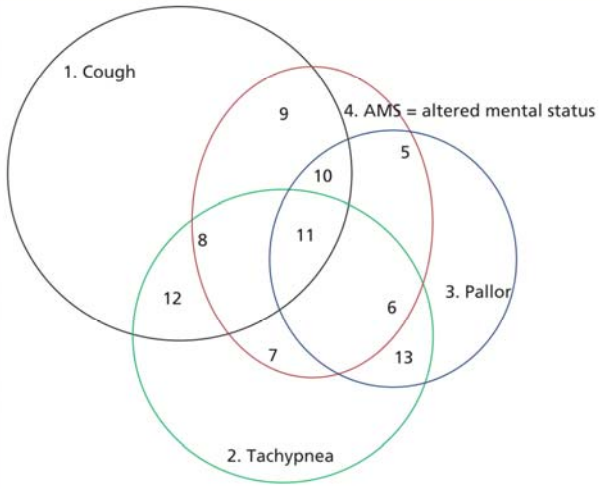


Figure 1.5 Syndromic diagnosis: a Venn diagram of acutely febrile children in sub-Saharan Africa. Total area of rectangle indicates all acutely febrile children in sub-Saharan Africa. Area of colored circles indicates prevalence of each of four clinical signs: cough (black), tachypnea (green), pallor (blue), and altered mental status (red).

combined with epidemiologic assessment of pre-test probabilities of diseases, this very efficient clinical approach considers the likelihood of a combination of findings in order to make a "syndromic diagnosis" (English *et al.*, 2003), as illustrated by the Venn diagram in Figure 1.5. The areas on the diagram are approximate and will vary by time, place, and person. Combinations of findings, or areas of numbered overlaps, are "syndromes" and can suggest specific diagnoses, of which the following are examples.

- Cough (black circle 1) plus tachypnea (green circle 2) suggests pneumonia. If the child has only these two findings (area 12), this is potentially pneumonia, which is much more likely if there is also chest retraction. However, if the child has additional symptoms or combinations (areas 6, 7, 8, and/or 11), the child has complicated pneumonia and/or additional disease(s).
- Palmar pallor (blue circle 3) in the febrile child suggests malaria. If the patient also has altered mental status (area 5) and/or tachypnea (area 6), complicated malaria is likely.
- Altered mental status (red circle 4) in the febrile child suggests meningitis; lumbar puncture is recommended, regardless of other finding, and especially if there are no other findings. In resource-limited settings, where comprehensive work-ups are usually not available, syndromic management becomes increasingly important.

In general, the greater the number of combined findings or elements of a syndrome present, the more likely and specific is the diagnosis of the suspected disease. Palmar pallor (Muhe *et al.*, 2000) could indicate anemia (Montresor *et al.*, 2003; Calis *et al.*, 2008) from a variety of causes. However, the likelihood of malaria is raised if palmar pallor is part of a syndrome of findings consistent with malaria (Taylor & Molyneux, 2003).

Prevention Topic 2:

PRIMARY PREVENTION – BEHAVIORAL COUNSELING TO PREVENT CARDIOVASCULAR DISEASE AND OBESITY

Learning Objectives

1. Identify the top ten causes of overall mortality in the U.S.

2. List two reasons why physicians should perform behavioral counseling.

3. Examine evidence of prevention effectiveness by physicians towards initiating, sustaining and/or enabling patients to succeed with tobacco cessation.

4. Given a clinical scenario, identify a patient's modifiable risk factors for cardiovascular disease; review a) the Stages of Change model; b) the Health Beliefs model; and c) the Five A's model; and apply motivational interviewing techniques to counsel the patient.

5. Explain the role of nutrition/physical activity in cardiovascular disease.

6. Provide specific lifestyle recommendations for the management of coronary artery disease.

7 . List medications used in the primary prevention of cardiovascular disease.

8. Identify two strategies that have been shown to decrease the risk of diabetes type 2 in those with pre-diabetes by 58%

9. Discuss the role of screening and office interventions for overweight and obesity in the primary care office.

10. Recognize the *value* of information technology for promoting adherence to clinical practice guidelines.

Recommended Readings

1. The Seventh Report of the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure (JNC VI) http://www.nhlbi.nih.gov/guidelines/hypertension/jnc7full.pdf

2. The JNC 8 Hypertension Guidelines: An In-Depth Guide. http://www.ajmc.com/journals/evidence-based-diabetes-management/2014/january-2014/the-jnc-8-hypertension-guidelines-an-in-depth-guide

3. Source: National Institutes of Health. How to Help Your Patients Stop Smoking: A National Cancer Institute Manual for Physicians. NIH Publication No. 98-3064. 1998. Table 1.

4. Stages of Change model. Table 2.

5. Health Beliefs model. Table 3.

6. Motivational Interviewing Algorithm. Table 4. The UCLA Center for Human Nutrition available at http://www.cellinteractive.com/ucla/physcian_ed/interview_alg.html accessed March 31st, 2008.

7. Updated ATP III LDL-C Goals & Risk Categories. Table 5. http://www.nhlbi.nih.gov/guidelines/cholesterol/atp3upd04.pdf

8. Guide to Clinical Prevention Services (2014) https://www.ahrq.gov/professionals/clinicians-providers/guidelines-recommendations/guide/index.html

Supplemental Readings/Websites

1. Wellness Prescriptions: Simple Steps to a Longer, Healthier Life, Bell, Marvin Moe, MD. Better Health Books, 2005

2. Searight HR. Realistic Approaches to Counseling in the Office Setting. Am Fam Physician. 2009;79 (4):227-284. http://www.aafp.org/afp/2009/0215/p277.pdf

Case History - Cardiovascular Disease

A 50 year-old Caucasian man presents to your office with a sore throat for 2 days. He has had a low-grade fever (99F) and a slight cough and running nose. He denies ear pain or difficulty swallowing. His appetite is normal.

Before you start the physical exam, you note that your nurse has recorded his vitals as blood pressure 160/80, pulse 80, respirations 20, and temperature 98.7F. His height is 5'10" and weight is 220 pounds. What additional questions may you want to ask this patient?

What do you want to look for on physical exam?

What is your assessment and plan?

One month later the patient returns for follow up BP and weight check. Today it is 165/85 and his weight is unchanged. His lipid panel came back as follows: Total cholesterol 240, Triglycerides 200, LDL 160, HDL 35. What stage of hypertension does he have?

Based on this, what would you recommend the patient do?

What further work up and/or therapies would you recommend?

Table 1:
The 5 A's Model: A Physician's Guide For Helping Your Patients Stop Smoking **

1. **Ask** about smoking at every opportunity.
   - Prompt the patient for information by asking the following questions:
     - "Do you smoke?"
     - "How much?",
     - "How soon after waking do you have your first cigarette?",
     - "Are you interested in stopping smoking?",
     - "Have you ever tried to stop before?," "If so, what happened?"
2. **Assess** whether the patient is willing to make a 'quit' attempt at this time
   - Ask the patient if they are willing to quit smoking at this time (within the next 30 days).
   - If the patient is not ready to make a 'quit'now, provide a motivational intervention.
   - If the patient is willing to make a quit attempt at this time, provide assistance.
3. **Advise** all smokers to stop smoking.
   - State your advice clearly. For example: "As your physician, I must advise you to stop smoking now."
   - Personalize the message to quit. Refer to the patient's clinical condition, smoking or family history, personal interests, or social roles as reasons/motivators for quitting.
4. **Assist** the patient in stopping
   - Set a quit date
     - Help the patient pick a date within the next four weeks. Acknowledge that quitting now (today) is ideal.
     - Consider signing a stop-smoking contract with patient.
   - Provide self-help materials
     - If the patient is not willing to quit now, provide motivating literature such as the NCI's "Why Do You Smoke?" pamphlet.
     - Follow up on their status at their next visit.
     - Consider prescribing nicotine replacement therapy, especially for highly addicted patients (e.g., those smoking one pack or more a day or those who smoke within 30 minutes of waking). See Table 3 for a listing of nicotine replacement therapies.
     - See Table 4 for a listing of organizations that offer educational materials (print or online).
       - "Quit for Good" from the National Cancer Institute (NCI) is one example of educational information available
5. **Arrange** for follow-up
   - Call or write the patient within 7 days after initial visit. Reinforce the decision to quit. Remind them of the quit date.
   - Schedule a follow-up visit within 1-2 weeks after the quit date.
     - Ask about the patient's smoking status. This will provide support and help to prevent relapse.
     - Relapse is common; if it occurs, encourage the patient to try again immediately.
   - Schedule a second follow-up visit in 1-2 months.
   - For patients who have relapsed, discuss the circumstances of the relapse and other special concerns.
     - Recognize harm reduction as well as cessation. Acknowledge the health benefits of fewer number of cigarettes smoked; assist patient to recognize their skills in self-mastery as encouragement for behavior change. Commend them for their efforts.

**A 6th step is recommended for use with youth: it is entitled “Anticipate” and it precedes the “Ask” step. That is, anticipate that youth are experimenting or using tobacco.

Source: National Institutes of Health. How to Help Your Patients Stop Smoking: A National Cancer Institute Manual for Physicians. NIH Publication No. 98-3064. 1998.

Table 2. Stages of Change model

A recently married young woman talks of her hopes to become pregnant as soon as possible and start a family. She also reports that she shares a six-pack or two with her husband several times a week when they are partying.

Concept	Example of Physician Intervention
Pre-contemplation	Inquire as to whether or not she has thought about the effects of alcohol on her ability to get pregnant and/or on a developing fetus
Contemplation	Discuss what her ideas are regarding prenatal care (e.g., beliefs re: the effects of her behavior, including sleep, nutrition, stress level on developing fetus); give pamphlets
Preparation	[prep] Discuss resources available for support in cutting down or eliminating alcohol intake. Consider recommending a diary for recording her daily beer consumption and associated feelings/ circumstances
Action	Assist patient in action plan (e.g., including her husband at the next visit, setting a quit date, formalize or repeat referral to resources)
Relapse	Identify situations/feelings that prompt her to drink and strategies for Preventing relapse. Discuss alternatives to drinking and what to do when a relapse occurs. Acknowledge her demonstrated ability to change; the benefits baby may have already accrued via harm reduction

Table 3. Health Belief Model

Concept	Definition	Application
Perceived Susceptibility	One's opinion of chances of getting a condition	Define population(s) at risk, risk levels; personalize risk based on a person's features or behavior; heighten perceived susceptibility if too low.
Perceived Severity	One's opinion of how serious a condition and its sequelae are	Specify consequences of the risk and the condition

Perceived Benefits	One's opinion of the efficacy of the advised action to reduce risk or seriousness of impact	Define action to take; how, where, when; clarify the positive effects to be expected.
Perceived Barriers	One's opinion of the tangible and psychological costs of the advised action	Identify and reduce barriers through reassurance, incentives, assistance.
Cues to Action	Strategies to activate "readiness"	Provide how-to information, promote awareness, reminders.
Self-Efficacy	Confidence in one's ability to take action	Provide training, guidance in performing action.

Table 4. Motivational Interviewing Algorithm

1. Assess and Personalize Patient's Risk Status
   - "Based on your BMI, WC, labs, physical exam, family history and symptoms, I am concerned about the following: _____, _____, and _____."
   - "I want to talk to you about how your weight may be affecting your health."
2. Stages of Change Evaluation
   - "How do you feel about your weight?"
   - "What concerns do you have about health risks?"
   - "Are you considering/planning weight loss now?"
   - "Do the pros of changing outweigh the cons?"
3. Educate: Risks and Advise: Weight Goal
   - Educate: Medical Consequences Tip Sheet (longevity and quality of life)
   - Advise: Establish a reasonable goal for weight loss using a clear statement.
   - "A 5-10% weight loss over 6 months for a total loss of ____ to ___ pounds."
4. Assess Patient's Understanding and Concerns
   - "How do you feel about what I've said?"
   - "On a scale of 1 – 10, with 10 being100% ready to take action, how ready are you to lose weight?"
5. Facilitate motivation depending the patient's level of contemplation
   - 1-4 = Precontemplation. Goal: Move patient from "No!" to "I'll think about it."

     1. Validate the patient's experience.
     2. Acknowledge the patient's control of the decision.
     3. In a simple, direct statement, give your opinion on the medical benefits of weight loss for this patient.
     4. Explore potential concerns.
     5. Acknowledge possible feelings of being pressured.
     6. Validate that they are not ready.
     7. Restate your position that the decision to lose weight is up to them.
     8. Encourage reframing of current state of change *as the potential beginning of a change - rather than a decision to* never *change.*

   - 5-7 = Contemplation. Goal: Move to Prepartion

     1. Validate the patient's experience.
     2. Acknowledge patient's control of the decision.
     3. Clarify patient's perceptions of the pros and cons of attempted weight loss.
     4. Encourage further self-exploration.

5. Restate your position that it is up to them.
6. Leave the door open for moving to preparation.

- 8-10 = Preparation. Goal: Provide direction and support

1. Praise the decision to change behavior.
2. Prioritize behavior change opportunities.
3. Identify and assist in problem solving re: obstacles.
4. Encourage small, initial steps.
5. Assist patient in identifying social supports.

6. Schedule Follow-up
   - Tell patient when you would like to see them again.
   - Give patient a referral (to a dietitian / exercise specialist / therapist/ etc) if appropriate.

Nutrition Web Sites

American Cancer Society: www.cancer.org
American Heart Association: www.americanheart.org
Centers for Disease Control and Prevention: www.cdc.gov
International Food Information Center: http://www.foodinsight.org/about-ific-and-food-safety.aspx
American Dietetic Association, complete food & nutrition guide: www.eatright.org
Web Dietitian: www.webdietitian.com
National Heart, Blood & Lung Institute: www.nhlbi.nih.gov
Institute of Medicine: www.iom.edu
Botanicals: MD Anderson (www.mdanderson.org) and Memorial Sloan Kettering Cancer Centers (http://www.mskcc.org/mskcc/html/44.cfm)
National Heart Lung and Blood Institute:http://www.nhlbi.nih.gov/health/public/heart/hbp/dash/new_dash.pdf

Table 5. ATP III LDL-C Goals and Cutpoints for TLC and Drug Therapy in Different Risk Categories and Proposed Modifications Based on Recent Clinical Trial Evidence

Risk Category	LDL-C Goal	Initiate Therapeutic Lifestyle Changes (TLC)	Consider Drug Therapy
High Risk: CHD or CHD Risk Equivalents (10-year risk >20%)	<100 mg/dL (Optional goal: <70 mg/dL)	≥100 mg/dL	≥100 mg/dL (<100mg/dL consider drug options)
Moderately High Risk: 2+ Risk Factors (10-year risk 10% to 20%)	<130 mg/dL	≥130 mg/dL	≥130 mg/dL (100-129 mg/dL consider drug options)
Moderate Risk: : 2+ risk factors 10 year risk <10%	<130 mg/dL	≥130 mg/dL	≥160 mg/dL
Lower Risk:: 0-1 Risk Factor	<160 mg/dL	≥160 mg/dL	≥190 mg/dL (160-189 mg/dL: LDL-lowering drug optional)

From *Circulation*, July 13, 2004. http://www.nhlbi.nih.gov/guidelines/cholesterol/atp3upd04.pdf

Screening for Lipid Disorders in Adults

Release Date: June 2008

Summary of Recommendations

Screening Men

- **The U.S. Preventive Services Task Force (USPSTF) strongly recommends screening men aged 35 and older for lipid disorders.**
  Grade: A recommendation.
- **The USPSTF recommends screening men aged 20 to 35 for lipid disorders if they are at increased risk for coronary heart disease.**
  Grade: B recommendation.

Screening Women at Increased Risk

- **The USPSTF strongly recommends screening women aged 45 and older for lipid disorders if they are at increased risk for coronary heart disease.**
  Grade: A recommendation.
- **The USPSTF recommends screening women aged 20 to 45 for lipid disorders if they are at increased risk for coronary heart disease.**
  Grade: B recommendation.

Screening Young Men and All Women Not at Increased Risk

- **The USPSTF makes no recommendation for or against routine screening for lipid disorders in men aged 20 to 35, or in women aged 20 and older who are not at increased risk for coronary heart disease.**
  Grade: C recommendation

http://www.uspreventiveservicestaskforce.org/uspstf/uspschol.htm

Aspirin for the Prevention of Cardiovascular Disease

Release Date: March 2009

Summary of Recommendations

- **The USPSTF recommends the use of aspirin for men age 45 to 79 years when the potential benefit due to a reduction in myocardial infarctions outweighs the potential harm due to an increase in gastrointestinal hemorrhage.**
  Grade: A recommendation.
- **The USPSTF recommends the use of aspirin for women age 55 to 79 years when the potential benefit of a reduction in ischemic strokes outweighs the potential harm of an increase in gastrointestinal hemorrhage.**
  Grade: A recommendation.
- **The USPSTF concludes that the current evidence is insufficient to assess the balance of benefits and harms of aspirin for cardiovascular disease prevention in men and women 80 years or older.**
  Grade: I statement.
- **The USPSTF recommends against the use of aspirin for stroke prevention in women younger than 55 years and for myocardial infarction prevention in men younger than 45 years.**
  Grade: D recommendation.

http://www.uspreventiveservicestaskforce.org/uspstf09/aspirincvd/aspcvdrs.htm

Screening for Type 2 Diabetes Mellitus in Adults

Release Date: June 2008

Summary of Recommendations

- **The USPSTF recommends screening for type 2 diabetes in asymptomatic adults with sustained blood pressure (either treated or untreated) greater than 135/80 mm Hg.**
  Grade: B Recommendation.
- **The USPSTF concludes that the current evidence is insufficient to assess the balance of benefits and harms of screening for type 2 diabetes in asymptomatic adults with blood pressure of 135/80 mm Hg or lower.**

http://www.uspreventiveservicestaskforce.org/uspstf/uspsdiab.htm

Screening for Obesity in Adults

Release Date: December 2003

Summary of Recommendations

- **The USPSTF recommends that clinicians screen all adult patients for obesity and offer intensive counseling and behavioral interventions to promote sustained weight loss for obese adults. Grade: B Recommendation.**
- **The USPSTF concludes that the evidence is insufficient to recommend for or against the use of moderate- or low-intensity counseling together with behavioral interventions to promote sustained weight loss in obese adults. Grade: I Statement.**
- **The USPSTF concludes that the evidence is insufficient to recommend for or against the use of counseling of any intensity and behavioral interventions to promote sustained weight loss in overweight adults. Grade: I Statement.**

http://www.uspreventiveservicestaskforce.org/uspstf/uspsobes.htm

Preventive Topic 3:

SECONDARY PREVENTION – SCREENING TO MAKE A DIFFERENCE

1. Review the definition and goal of secondary prevention.

2. List six criteria for judging the value of screening tests.

3. Discuss secondary prevention screening across the age and disease spectrum giving two examples of common screening tests/procedures in children, adolescents and adults.

   Below are a few examples to facilitate discussion, other examples are possible.

Children	Adolescent	Adult
• Screen Hb/Hct for anemia • Lead screening • Growth • Developmental milestones	• PAP test • Screen for tobacco use and recommend tobacco cessation • Alcohol and substance abuse	• Breast cancer • Cervical cancer • Colon cancer • Coronary heart disease • Depression • Elder abuse

4. Evaluate the case for and against screening for prostate and colon cancer.

5. Evaluate the case for and against screening mammography.

6. List the options for secondary screening for each of the following diseases: cervical cancer, ovarian cancer and testicular cancer.

7. Discuss the role of BRCA1 and 2 genetic testing. What are the prevention implications?

8. Define the unique role for family practice in secondary prevention.

Required Readings

1. Clerkship Manual

2. Guide To Clinical Preventive Services: (Summary Recommendations) 3rd edition
   Screening for abdominal aortic aneurysm
   http://www.uspreventiveservicestaskforce.org/uspstf/uspsaneu.htm
   Screening for breast cancer
   http://www.uspreventiveservicestaskforce.org/Page/Document/UpdateSummaryFinal/breast-cancer-screening1
   Screening for colorectal cancer
   https://www.uspreventiveservicestaskforce.org/Page/Document/UpdateSummaryFinal/colorectal-cancer-screening2
   Screening for cervical cancer
   http://www.uspreventiveservicestaskforce.org/uspstf/uspscerv.htm
   Screening for prostate cancer
   http://www.uspreventiveservicestaskforce.org/uspstf/uspsprca.htm
   Screening for depression

http://www.uspreventiveservicestaskforce.org/Page/Document/UpdateSummaryFinal/depression-in-adults-screening1?ds=1&s=depression screening

Screening for coronary heart disease
http://www.uspreventiveservicestaskforce.org/uspstf/uspsacad.htm

Screening for hypertension
http://www.uspreventiveservicestaskforce.org/Page/Document/UpdateSummaryFinal/high-blood-pressure-in-adults-screening

Screening for lung cancer
http://www.uspreventiveservicestaskforce.org/uspstf/uspslung.htm

Screening for testicular cancer
http://www.uspreventiveservicestaskforce.org/uspstf/uspstest.htm

Screening for ovarian cancer
http://www.uspreventiveservicestaskforce.org/uspstf/uspsovar.htm

Screening for pancreatic cancer
http://www.uspreventiveservicestaskforce.org/uspstf/uspspanc.htm

Screening for oral cancer
http://www.uspreventiveservicestaskforce.org/uspstf/uspsoral.htm

Screening for thyroid disease
http://www.uspreventiveservicestaskforce.org/Page/Document/UpdateSummaryFinal/thyroid-dysfunction-screening

Screening for dementia
http://www.uspreventiveservicestaskforce.org/uspstf/uspsdeme.htm

Screening for suicide risk
http://www.uspreventiveservicestaskforce.org/uspstf/uspssuic.htm

Supplemental Readings/Websites

1. Guidelines for Care - www.guidelines.gov.

2. Agency for Health Care Research and Quality - www.ahrq.gov.

Preventive Topic 4:

FAMILY MEDICINE AND PUBLIC HEALTH

Learning Objectives: Adolescent and Adult Immunizations

1. List the vaccines included in the routine adolescent immunization schedule.

2. List the vaccines included in the adult immunization schedule.

3. Know where to find the current recommended child, adolescent, and adult immunization schedules.

4. Know the CDC guidelines for influenza vaccination.

5. Know the ACIP recommendations for HPV vaccination:

6. List the true contraindications to vaccines and conditions that are commonly mistaken to be contraindications.

7. Discuss with patients common misconceptions and misinformation regarding vaccine risks and benefits.

8. Know where to find information about vaccine side effects.

9. Know where to find information on vaccines recommended for international travel.

10. Discuss the importance of office systems in insuring that patients are up to date on immunizations.

Learning activities

1. Construct an immunization plan for an adolescent.
2. Construct an immunization plan for an adult.

3. Construct a “catch-up” immunization schedule for an adult or adolescent who is under immunized.

Recommended Readings

1. General Recommendations on Immunization Recommendations of the Advisory Committee on Immunization Practices (ACIP) https://www.cdc.gov/vaccines/hcp/acip-recs/general-recs/index.html

2. Recommended Immunization Schedule for Adults Aged 19 Years and Older — United States, 2017 http://www.cdc.gov/vaccines/schedules/hcp/adult.html

3. Immunization Schedule Ages 0Through 18 http://www.cdc.gov/vaccines/schedules/downloads/child/0-18yrs-schedule.pdf

4. Summary Recommendations for Childhood and Adolescent Immunizations http://www.cdc.gov/vaccines/pubs/pinkbook/downloads/appendices/A/sum-child-recs.pdf

Supplemental Readings/Websites

1. http://www.cdc.gov/vaccines/news/news-pubs/index.html-this website has info re: vaccine related topics such as vaccine safety and adverse events and you may also search for contraindications for vaccine, info for parents and general side effects or automatic updates.
2. Updated Recommendations for Use of Tetanus Toxoid, Reduced Diphtheria Toxoid, and Acellular Pertussis (Tdap) Vaccine in Adults Aged 65 Years and Older — Advisory Committee on Immunization Practices (ACIP), http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6125a4.htm
3. Broder KR, et al. Preventing tetanus, diphtheria, and pertussis among adolescents: use of tetanus toxoid, reduced diphtheria toxoid and accellular pertussis vaccines. MMWR March 24, 2006; 55 – No. RR-3. http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5517a1.htm
4. US Dept. Of Health & Human Services. Combating the silent epidemic of viral hepatitis Action Plan for the prevention, care and treatment http://hepb.org/pdf/Viral-Hepatitis-Action-plan-2011.pdf
5. MMWR. Preventing Tetanus, Diphtheria, and Pertussis Among Adults: Use of Tetanus Toxoid, Reduced Diphtheria Toxoid and Acellular Pertussis Vaccine. Vol 55, No RR-17. 2006 Dec 15.
6. Prevention of Herpes Zoster Recommendations of the Advisory Committee on Immunization Practices (ACIP) http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5705a1.htm
7. MMWR. Recommendations for Partner Services Programs for STIs Vol 57 1-63 October 30, 2008 http://www.cdc.gov/mmwr/pdf/rr/rr57e1030.pdf

Learning Objectives: Screening for Sexually Transmitted Infections

1. Discuss why the CDC now recommends routine and widespread screening for HIV and compare the USPSTF recommendation for HIV screening to that of the CDC.

2. Know where to find current treatment recommendations for sexually transmitted infections.

3. Formulate a differential diagnosis for cervicitis, vaginitis, and urethritis.

4. Describe the presenting symptoms of gonorrhea, chlamydia, syphilis, herpes and papilloma virus in both men and women.

5. Discuss the USPSTF recommendations for screening for chlamydia, gonorrhea and syphilis.

6. Discuss the collaborative role of family physicians and local health departments in community control of sexually transmitted infections.

Learning Activities

1. Present a young adolescent female as asymptomatic and discuss STI/HIV screening.

2. Present a symptomatic male and discuss diagnosis and treatment for gonorrhea and how to handle follow up, contact tracing and public health reporting. Discuss HIV screening and risk reduction.

Required Readings

1. Guide to Clinical Preventive Services: (Summary Recommendations) 2014. http://www.ahrq.gov/sites/default/files/wysiwyg/professionals/clinicians-providers/guidelines-recommendations/guide/cpsguide.pdf
2. Screening for chlamydia and gonorrhea: http://www.uspreventiveservicestaskforce.org/Page/Document/UpdateSummaryFinal/chlamydia-and-gonorrhea-screening?ds=1&s=chlamydia
3. Screening for syphilis: http://www.uspreventiveservicestaskforce.org/Page/Document/UpdateSummaryFinal/syphilis-infection-in-nonpregnant-adults-and-adolescents
4. Screening for HIV: http://www.uspreventiveservicestaskforce.org/uspstf/uspshivi.htm Communicable Disease Report Form pdf. http://www.azdhs.gov/phs/oids/pdf/forms/cdr_form.pdf
5. Reportable Communicable Diseases List AZDHS pdf http://www.azdhs.gov/documents/preparedness/epidemiology-disease-control/communicable-disease-reporting/reportable-diseases-list.pdf
6. Armstrong, C, CDC Updates Guidelines on Diagnosis and Treatment of Sexually Transmitted Diseases Am Fam Phys Jul 1 2011;84(1)123-125. http://www.aafp.org/afp/2011/0701/p123.pdf

Preventive Topic 5:

CARE OF OLDER ADULTS – HEALTH PROMOTION AND DISEASE PREVENTION

Learning Objectives

1. Discuss challenges in assessing prevention strategies in the elderly.

2. List five leading causes of death in the older adult and discuss strategies for prevention.

3. Identify and define the six components of a comprehensive assessment of older adults.

4. Differentiate between *basic* activities of daily living (BADLs)*, instrumental* activities of daily living (IADLs), *and advanced* activities of daily living (AADLs) and the role each plays in overall function and quality of life.

5. List and discuss 10 common syndromes associated with older adults.

6. Identify four strategies that promote independence and optimal aging.

7. List and discuss how aging can uniquely affect older adults with disabilities.

Recommended Readings

4. Tomasa L. Activities of daily living (ADLs): an assessment of function. 2001.

5. Carroll T, Tomasa L. In-home safety checklist – things you can do to reduce the risk of falling. 2001.

6. CDC. Falls and hip fractures among older adults. National center for injury prevention & control home page. Available from: URL: http://www.cdc.gov/ncipc/factsheets/adultfalls.htm

7. Collins LG and Swartz, K. Caregiver Care - Am Fam Phys. 2011 Jun 1; 83(11):1309-1317 http://www.aafp.org/afp/2011/0601/p1309.html.

8. Bassem, E. And Higgins, KE. Physical Activity Guidelines for Older Adults Am Fam Phys. 2010 Jun 1; 81(1):55-59 http://www.aafp.org/afp/2010/0101/p55.html

9. Arizona Healthcare Power of Attorney and Arizona Living Will and Instructions https://www.azag.gov/seniors/life-care-planning

10. Folstein Mini Mental Status Exam.

11. Clock Drawing

12. Geriatric Depression Scale (GDS).

13. Facts About Older Adults with Developmental Disabilities and Their Aging Family Caregivers, The Department of Disability and Human Development, the University of Illinois at Chicago

14. Spalding MC and Sebesta, SC. Geriatric Screening and Preventive Care Am Fam Phys 2008 78(2) 206-15. http://www.aafp.org/afp/2008/0715/p206.html

15. Elsawy B, Higgins KE. The Geriatric Assessment. Am Fam Phys. 2011 Jan 1;83(1):48-56 http://www.aafp.org/afp/2011/0101/p48.html

16. Prevention of Falls in Community-Dwelling Older Adults: Recommendation Statement Am Fam Phys. 2012 Dec 15;86(12):1215-1217 http://www.aafp.org/afp/2012/1215/od3.pdf

Supplemental Readings/Websites

1. Administration on Aging – www.aoa.gov.
2. Agency for healthcare Research and Quality – www.ahcpr.gov.
3. Alzheimers Association – www.alz.org.
4. American Association of Retired Persons – www.aarp.org.
5. American Geriatrics Society – www.americangeriatrics.org.
6. ElderWeb -- www.elderweb.com.
7. National Institute on Aging – www.nih.gov/nia.

Activities of Daily Living (ADLs): An Assessment of Function

Family Medicine Clerkship

Name: _____ Date: _____

Location: _____ Information Obtained From: _____

Lives at: own home with family care home nursing home other: _____

BASIC ADLs	**LEVEL OF HELP** **I = Independent** **A = Some Assistance** **D = Dependent**	**ASSISTIVE DEVICES USED**	**PLAN OF ACTION AND RECOMMENDATIONS**
AMBULATION: Walking for 50 feet or Room to Room	I A D		
AMBULATION: On uneven surfaces or stairs.	I A D		
TRANSFER: Gets in/out of bed or chair	I A D		
BATHING: Gets to or obtains water, washes, dries body	I A D		
EATING: Gets food into body from plate, cup etc.	I A D		
DRESSING: Selects clothes, puts top, bottom, shoes	I A D		
GROOMING: Brushes hair, teeth, shaves, puts on makeup	I A D		
BOWEL FUNCTION: Gets to bathroom in time	I A D		
BLADDER FUNCTION: Gets to bathroom in time	I A D		
INSTRUMENTAL ADLs	**LEVEL OF HELP**	**HOW ACTIVITY IS COMPLETED**	
GET TO PLACES OUT OF WALKING DISTANCES (by bus, taxi, cab)	I A D		
SHOPPING: groceries, clothes, etc.	I A D		
LAUNDRY: Washing, folding, hanging	I A D		
HOUSEWORK: Vacuuming, cleaning, etc.	I A D		
COOKING: Safe use of stove, oven, microwave	I A D		

MONEY MANAGEMENT: Pay bills, write checks, etc.	I A D	
USING THE TELPHONE: Call friends, family, for help	I A D	
MANAGING MEDICATIONS: Takes meds as directed	I A D	
DRIVING: Day and night	I A D	
HOME MAINTENANCE: Yardwork, plumbing, repairs	I A D	
READING:	I A D	
WRITING:	I A D	
ADVANCED ADLs: ability to fulfill societal, community and family roles (individualized)	**LEVEL OF HELP**	**HOW ACTIVITY IS COMPLETED**
	I A D	
	I A D	
	I A D	

In-Home Safety Check List

Things you can do to reduce your risk of falling

Falls are preventable. Falls are one of the leading problems facing the older person and may lead to permanent disability that limits a person's independence. Indirectly, the fear of falling may also be damaging. Elderly who fear falling limit their activities, which ultimately leads to social isolation. Making simple changes to lifestyle and the environment can provide peace of mind and prevent the likelihood of falling.

The older population's risk of falling is related to three influences: the normal aging progress, pathology that increases with age, and environmental conditions. Below are simple lifestyle changes and home modifications that may increase your safety and deter falls.

The lack of exercise leads to weakness and increases your chance of falling. Exercise that improves strength, balance, and coordination are one of the most important ways to reduce your risk of falling. Ask your doctor or health care provider about the best type of exercise program for you.

The following includes helpful hints to help you reduce your risk of falling. This list does **not** include all the potential causes of falls. **Review the following and check those that apply to you.** Contact your health care provider if you have further questions, or need help making changes. Home visits and safety assessments can be done by physicians, nurses, social workers, physical therapists, occupational therapists, or other trained individuals.

Have you fallen 2 or more times in the past 6 months?

Get a checkup! Falls lead to injuries. You need to find out why you are falling.

Do you have:

Trouble walking without holding on to something

- ❑ You may need a cane or a walker
- ❑ Consult your doctor or health care provider

Poor lighting

As you get older, you need brighter lights to see well

- ❑ Add nightlights where overhead lighting is lacking
- ❑ Add nightlights in the bathroom, bedroom, or hallway to make night trips to the bathroom safer
- ❑ Keep a charged flashlight near your bed for emergencies
- ❑ Adding lamp shades or frosted bulbs can reduce glare

Throw Rugs or Clutter

- ❑ Remove things from the floor and keep hallways or high-traffic areas clear
- ❑ Remove papers, books, clothes, electric cords, and shoes from stairs and places where you walk
- ❑ If you do not wish to remove your throw rugs, they should be securely fastened with an adhesive, double-stick tape

Unsafe, broken or worn steps/stairs/railings

- ❑ Add bright strips of tape to the edge of each stair in order to see them better
- ❑ Repair broken or worn steps and keep them free of clutter
- ❑ Repair or install handrails on stairs

Spills or slippery floors (bathroom, bathtub, shower)

- ❑ Wipe up spills as soon as they happen
- ❑ Wear supportive, rubber-soled shoes that fit well
- ❑ Always use a non-skid bathtub / shower mat

- If you bathe in a shower, consider installing a non-skid shower chair and hand-held shower head so you can sit while bathing
- Install grab bars or handrails in the shower, on walls around the bathtub, and alongside the toilet when necessary
- Pool shoes worn before, during and after bathing provides a non-slip surface
- Avoid pulling up on the sink or towel bars to get up from the toilet or bathtub. They are not securely fastened to the wall or floor, and are not intended to support your weight

Floppy slippers or a long bathrobe

- Wear well-fitting supportive shoes with non-skid soles
- Avoid night clothing that drags on the ground
- Keep robe tied

Phone that is not accessible

Help is only a phone call away

- Keep emergency numbers readily available
- Keep phones in bedroom, kitchen, or where you spend most of your time
- Cordless phones can be kept on your walker (walker bag)
- "Lifeline" can be worn on neck or wrist

Multiple Medications

Certain medications can cause dizziness, drowsiness and balance problems.

- Have all of your medications (including over-the-counter medicines such as cold medicines) reviewed each time you are given a new prescription or at least yearly by a pharmacist or doctor
- Limit alcohol intake
- Make a list of all your medications, including dose and frequency and keep in a clearly visible location (for example: front of ice box, kitchen cabinet)
- Develop a reminder system (med box, chart, etc.)
- Keep all medications in one central location

Sensory Changes:

Hearing

- Dizziness can occur with hearing loss
- Make an appointment to check your hearing

Vision

- Keep your glasses clean
- Have your eyes examined regularly – you may be wearing the wrong glasses or have a medical condition such as glaucoma, cataracts, macular degeneration, etc.

Regularly used items out of reach (Reach-Balance Test)

- Put regularly used items on shelves within easy reach between hip and eye level
- A long-handled grasper can be used to reach objects that are on high shelves or on the floor

Reach-Balance Test

While standing, can you lean forward and reach out with one arm in front of you 1 to 3 feet without losing your balance? If not, you may have an increased risk of falling.

Furniture that is difficult to get in and out of? (Get Up and Go Test)

- Try to sit on furniture with good back support that you can get into and out of easily
- Firm chairs with arm rests are easier to get out of
- Add pillows to the back of the chair so your feel can touch the floor

- ❑ Do not sit on low furniture
- ❑ Use a raised toilet seat
- ❑ Use caution when getting up – **take your time**

Get Up and Go Test

How long does it take to go from sitting to standing and then take a few steps? Less than 5 seconds is good. More than 5 seconds or repeated efforts may mean you have an increased risk of falling.

Tracy Carroll, PT, MPH Dept. of Family and Community Medicine, University of Arizona
Lynne Tomasa, PhD, MSW, Dept. of Family and Community Medicine, University of Arizona

Home Visit with an Older Adult
Family Practice Clerkship 2010-11

Introduction:

Each student is encouraged to make a home visit with an older adult. The home visit can be done with the preceptor, a home health staff member, hospice team member, or family medicine faculty member. The purpose of the home visit is do a comprehensive evaluation with the goal of promoting independence, safety and health in the home. **Students are encouraged** to fill out the Home Assessment Form as completely as possible or as appropriate.

Learning Objectives:

1. Conduct an in-home assessment that addresses home safety, nutritional status, medication use, finances, functional status, and social supports.
2. Discuss the influence of culture, family, living environment, and other factors in the health care status of older persons and incorporate this knowledge into a care plan.
3. Identify potential problems regarding falls/home safety, abuse (physical, neglect and exploitation), and caregiver stress.

Regular in-home assessments are becoming increasingly important because the number of frail and immobile elders is forecast to double over the next 20 years. Home assessments reveal new and important information, which typically cannot be obtained even in the most comprehensive office visit. The benefits of a home evaluation include 1) enhanced physician/patient communication; 2) fall/accident prevention; 3) caregiver assessment/needs; 4) improved functional status; and 4) more accurate decision-making regarding long term care needs.

For example, the older adult may show a higher level of functioning than during the office evaluation because of adaptations made in their home. At the same time, health and safety hazards may be identified before they become a problem and before an injury occurs. Direct observation in the home of older adult-caregiver interactions allows the health care provider to offer suggestions and education. Burnout and the potential for abuse and neglect can be identified and addressed. A home assessment is particularly helpful in maximizing independence and quality of life, and when necessary, evaluating an older person for possible institutional care.

Home visits can address a single problem (terminal care) or entail the complete assessment of all domains.

Indications for In-Home Assessment

- Recent discharge from hospital or long term care facility
- Planning rehabilitative or restorative therapy
- Non response to therapy
- Preventive care for elders at risk of falling or injury
- Individuals with dementia and or depression
- Complicated social situation
- Social isolation
- Fact-finding related to weight loss, failure to thrive, or unexplained new problem
- Individuals facing chronic or terminal illness

Assessment Tools Commonly Used to Assess Older Adults

- Home Assessment Tool
- Advance Directives
- Folstein Mini Mental Exam
- Geriatric Depression Scale
- In-Home Safety Check List (included in syllabus for Week 6)

Student:

Date:
Accompanied by:

Home Assessment Tool

Home Visit with: _____
Lives Alone: YES NO

Lives with: _____ Relationship: _____ Phone: _____
Lives in: Own home/Apt. Assisted Living Boarding/Care home
Nursing Home

Other: _____

FUNCTIONAL STATUS

Degree of Independence **(check the appropriate column according to the following definitions)** **I = INDEPENDENT** **SH = SOME HELP** **D = DEPENDENT**							**ASSISTIVE DEVICES**	
ACTIVITIES OF DAILY LIVING (ADLs)				**INSTRUMENTAL ADLS (IADLs)**			Check if being used	
	I	**SH**	**D**		**I**	**SH**	**D**	cane	
ambulation				housework				walker	
transfer				laundry				wheelchair	
bathing				meal preparation				commode	
grooming				shopping				glasses	
dressing				money management				hearing aid	
eating				use of telephone				life-line	
toileting				taking own medications				other:	
Driving History: (Accidents)									

Exercise Activity/ Frequency:

GAIT AND BALANCE (Timed Get up and Go Test):

Using a Watch - Ask person to stand up from a chair, walk 3 meters, turn around, walk back, and sit down. (< 5 sec. =good; >5 sec./repeated efforts = increased risk of falling; > 15 sec. = abnormal)
Comment on unsafe or incomplete transfers, poor sitting balance, instability, staggering, discontinuous steps, hesitancy, unsafe maneuvers, grabbing for support, stumbling).

ENVIRONMENTAL - Fall History (SPLAT)

S ymptoms
P revious Falls
L ocation
A ctivity
T ime

FAMILY/COMMUNITY SUPPORT

Support System: Family _____

Friends/Neighbors_____

Church _____ _____

Outside Activities: _____

Fear of Crime _____

Potential for Abuse / Neglect: YES NO Unable to Assess

Vulnerable: YES NO Reason for Concern: _____

Living Will: YES NO

Durable Medical Power of Attorney: YES (name: _____) NO
Legal Guardian: YES (name: _____) NO

Services Currently Received

Case Management ___ Day Care ___ Home Meals___ Home Health___
Mental Health Counseling___ Hospice ___ Homemaker ___ Respite___ Other _____

MENTAL STATUS

Geriatric Depression Scale (GDS) score _____ Folstein Mini Mental score _____

Suicide history/risk _____

Recent behavioral changes (per caregiver):
- Wandering:
- Paranoia:
- Hallucinations:
- Other:

FINANCIAL SITUATION

Health Insurance_____ Social Security _____ SSI _____

Pension _____ Other _____

Able to afford medications?	YES	NO
Able to afford adequate nutrition?	YES	NO
Able to afford rent, other necessities?	YES	NO

NUTRITIONAL STATUS

Special Diet _____
Typical Recall (ask what they ate the previous day for each meal, including liquid intake)

_____

_____

_____

Nutritional Risk YES NO
Reason:_____

Ask permission to check refrigerator for

Fresh fruits	YES	NO
Fresh vegetables	YES	NO
Old/spoiled food	YES	NO
Other Concerns:		

Recent weight loss YES (from _____ to _____) NO CHANGE
(Increased risk if weight decreased 5% in one month or 10% in six months)

Problems with:
- chewing_____
- dentures_____
- swallowing_____
- constipation_____
- diarrhea_____

MEDICATIONS

List of medications (include over the counter medications, herbals and alternative Rx)

Medication and Dose	Side Effects	Is it Helping?

Able to state medication dose and purpose
(have person read label to you and ask how many did you take yesterday?)

_____

Takes medication as prescribed (is the dose taken same as label instructions?)

_____

Medication set-up (location and aids used to remember schedule, i.e. med box)

_____

Do a complete pill count if compliance is a concern _____

SAFETY CHECK LIST

Check potential safety hazards

_____Clutter

_____Loose telephone cords

_____Poor lighting (bathroom, bedroom, living area)

_____Pets underfoot

_____Burners/Oven Left On

_____Loose Carpets

_____Steps

_____Poor shoes/Slippery shoes/Socks

_____Shelves beyond easy reach

_____No grab bars in tub/shower

_____ Loose/No handrails

_____No smoke detectors

_____Doors left unlocked

_____Other _____

Recommendations Made: _____

_____

_____

NOTES

(

Preventive Topic 6: Women's Health

Objectives:

Contraception

Discuss different contraceptive options and the associated counseling with each option

Prenatal Care

1. Describe the best means of accurately determining gestational age

2. Cite when prenatal vitamins or supplements are indicated

3. Summarize appropriate screening tests during pregnancy. When to order them.

4. How does a prior cesarean delivery influence current delivery options.

Menstrual Irregularities

1. Define each of the following

    a. Premenstrual syndrome

    b. Dysmenorrhea

    c. Menorrhagia

2. Describe the appropriate clinical, lab, and radiologic evaluation for each of the above

3. Cite the best course of treatment or therapeutic options for each

Menopause

1. Identify symptoms associated with menopause

2. Potential therapeutic options for those associated symptoms

3. Discuss osteoporosis prevention and treatment

4. Hormone therapy. What are the options?

Recommended Reading

Sloane, PD, Slatt, LM, Ebell, MH, Jacques, LB & Smith, MA (2011) *Essentials of Family Medicine* (6th edition) Baltimore, MD: Lippincott, William & Wilkens