General Medicine II

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Professionalism and Ethics

- Requires mastery and maintenance of specialized knowledge and skills, commitment to code of conduct
- Beneficence, nonmaleficence, patient autonomy, justice
- Physicians are not obliged to carry out wishes/requests that violate their personal values and conscience, standards of medical care and ethical practice, or law.
- Abandonment is unethical and could be cause for legal action

Professionalism and Ethics

Fundamental Principle	
Primacy of patient welfare	Altruism is a central trust factor in the physician-patient relationship. Market forces, societal pressures, and administrative exigencies must not compromise this principle.
Patient autonomy	Patients' decisions about their care must be paramount, as long as those decisions are in keeping with ethical practice and do not lead to demands for inappropriate care.
Social justice	Physicians should work actively to eliminate discrimination in health care, whether based on race, gender, socioeconomic status, ethnicity, religion, or any other social category.

Professionalism and Ethics

Professional Commitment	
Competence	Physicians must be committed to lifelong learning and to maintaining the medical knowledge and clinical and team skills necessary for the provision of quality care.
Honesty with patients	Obtain informed consent for treatment or research. Report and analyze medical errors in order to maintain trust, improve care, and provide appropriate compensation to injured parties.
Patient confidentiality	Privacy of information is essential to patient trust and even more pressing with electronic health records.
Appropriate patient relations	Given the inherent vulnerability and dependency of patients, physicians should never exploit patients for any sexual advantage, personal financial gain, or other private purpose.
Improve quality of care	Work collaboratively with other professionals to reduce medical errors, increase patient safety, minimize overuse of health care resources, and optimize the outcomes of care.
Improve access to care	Work to eliminate barriers to access based on education, laws, finances, geography, and social discrimination. Equity requires the promotion of public health and preventive medicine, as well as public advocacy, without concern for the self-interest of the physician or the profession.
Just distribution of resources	Work with other physicians, hospitals, and payers to develop guidelines for cost-effective care. Providing unnecessary services not only exposes one's patients to avoidable harm and expense but also diminishes the resources available for others.
Scientific knowledge	Uphold scientific standards, promote research, create new knowledge, and ensure its appropriate use.
Manage conflicts of interest	Medical professionals and their organizations have many opportunities to compromise their professional responsibilities by pursuing private gain or personal advantage. Such compromises are especially threatening with for-profit industries, including medical equipment manufacturers, insurance companies, and pharmaceutical firms. Physicians have an obligation to recognize, disclose to the general public, and deal with conflicts of interest that arise.
Professional responsibilities	Undergo self-assessment and external scrutiny of all aspects of one's performance. Participate in the processes of self-regulation, including remediation and discipline of members who have failed to meet professional standards.

Professionalism and Ethics

- Confidentiality
  - depending on jurisdiction: child/elder abuse, infectious diseases, suicidal, homicidal, hazardous drivers (duty to protect public's health overrides duty to protect confidentiality)
  - confidentiality and social media is evolving area
- Informed Consent
  - obtaining a signed consent form is NOT equivalent to obtaining informed consent
- Decision-Making Capacity
  - *competence* is determined by legal system
  - physicians determine *decision-making capacity* in clinical setting
  - essential elements include: understanding of risks vs. benefits of proposed intervention and ability to communicate a decision

Professionalism and Ethics

- Decision-Making Capacity
  - dementia or mental illness do NOT exclude decision-making capacity
  - patients can refuse life-prolonging interventions
- Advance Care Planning (20%)
  - documentation of values, goals, and future health care preferences
  - living will and durable power of attorney (DPOA)
- Surrogate Decision-Making
  - patient > DPOA > person who knows patients preferences best (no next of kin in MI), physician acting in “best interest”

Professionalism and Ethics

- Withholding or Withdrawing Treatment
  - withdrawing/withholding interventions is NOT equivalent to PAS
  - physician can conscientiously object and transfer care
- Physician-Assisted Death
  - PAS- physician provides means for patient to terminate life
  - euthanasia- physician directly terminates the patients life
  - doctrine of *double effect*
- Requests for Interventions
  - NOT obliged to provide "futile" care/testing

Professionalism and Ethics

- Medical Error Disclosure
  - unintended acts/omissions that harm or have potential to harm patients
  - research suggests patients want to know and ethical principles dictate that all errors are disclosed
- Colleague Responsibility
  - physicians should report impaired or disruptive colleagues
  - culture of reporting and non-retaliation
- Ethical Dilemmas
  - review: 1) medical indications 2) patient preferences 3) patient QOL 4) contextual features
  - ethics committee consultation

Palliative Care

- Focus on meticulous symptoms management- physical, emotional, spiritual, social….
- Aligns comprehensive care to meet patients goals

Comparison of Palliative Care and Hospice

Palliative Care	Hospice
Maximize quality of life through meticulous symptom management, clarification of goals of care, and advance care planning	
Can access at any point during life-limiting illness, from diagnosis to death	Can access during terminal phase of disease (life expectancy of less than 6 months)
Can occur concurrently with life-prolonging or curative treatments	Must forego life-prolonging treatments
No limitation on treatment or hospitalization	Goal of avoiding further hospitalization, unless there is no alternative to adequately manage symptoms

Palliative Care

- Communication
  - bad news conveyed in an empathetic skillful manner results in increased patient satisfaction and decreased anxiety / depression
  - SPIKES- setting, perception, invitation, knowledge, empathy, strategize

Palliative Care

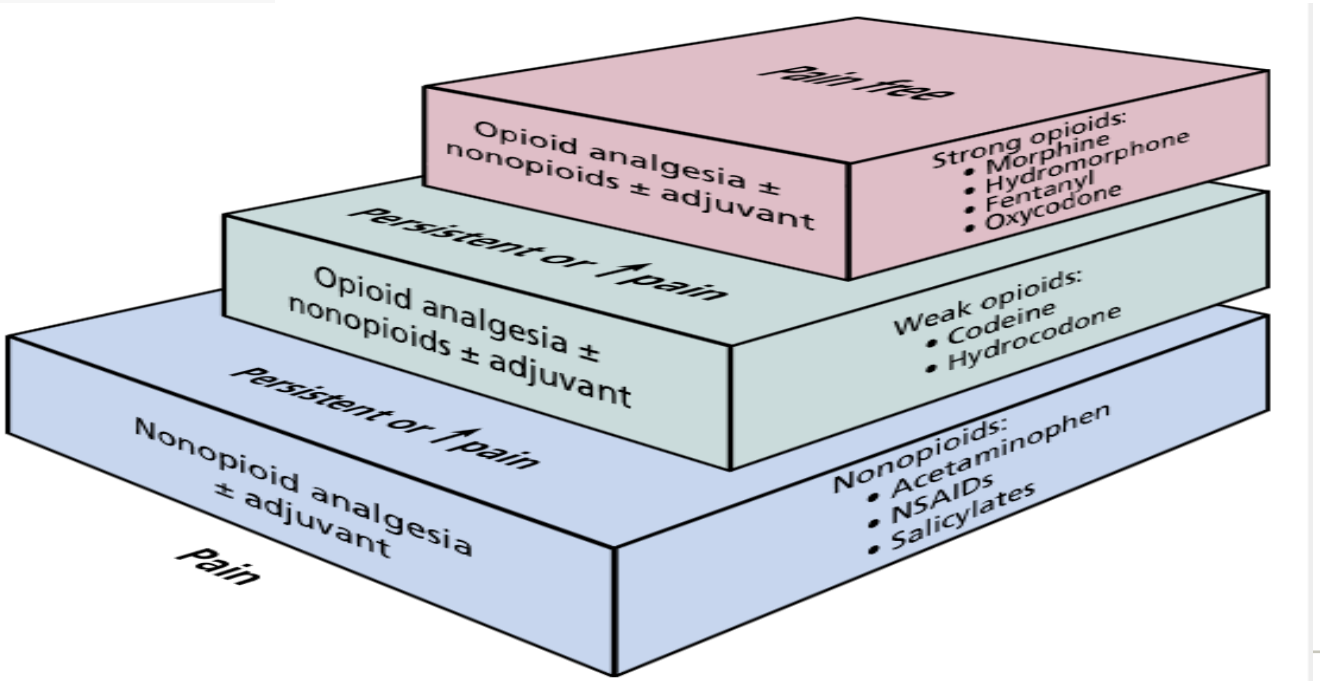
SPIKES Protocol for Breaking Bad News

	Step	Actions	Comments
S	Setting	Plan ahead and have the appropriate personnel and family members present. Anticipate and plan for possible patient reactions.	
P	Perception	Ask the patient what he or she has been told about the disease and/or the purpose of the meeting. Correct any misconceptions.	Gauge the patient's understanding of the situation. During this step, avoid the temptation to discuss the medical reality with the patient. Rather, let the patient tell you what he or she has heard.
I	Invitation	Find out how much the patient wants to know and how he or she would prefer to hear information.	If the patient does not want information, ask to whom you should speak on the patient's behalf.
K	Knowledge	Give the patient the news. Use short declarative sentences without jargon. Pause after giving the news to address any emotion.	Provide a "warning shot" that bad news is coming. Do not "sugarcoat" the truth. You cannot change bad news into good news. More words just create confusion.
E	Empathy	Use empathic statements to address emotion. Resist the temptation to rush in and "fix" the situation.	This is a critical step. Empathic statements demonstrate an understanding and continued commitment to the patient despite the bad news, letting the patient know that you are "in this together."
S	Strategize	Emphasize what can be done. Shift hope to achievable goals.	

Palliative Care

- Pain
  - often undertreated, assess other contextual features which augment perceived pain

World Health Organization analgesic ladder.



Palliative Care

- Pain
  - reserve fentanyl for opioid-tolerant patients- needs adequate SQ fat, increased temp increases absorption rates
  - merperidine not recommended as metabolites build up and increase seizure risk
  - codeine is very weak analgesic
  - morphine, codeine, and merperidine all contraindicated in patients with GFR <30mL/min/1.73m^2
  - tramadol and tapentadol have interaction risks given weak opioid properties and effects on serotonin and norepinephrine
  - methadone is inexpensive and effective but should be used by experts only (complex pharmacokinetics)

Palliative Care

- Pain
  - opioids via oral route preferred
  - no evidence of superiority in short versus long acting formulations as it pertains to pain control
  - constipation is universal- scheduled doses of stimulants (senna or biscodyl) in combination with docusate, osmotic laxative added if ineffective
  - methylnaltrexone used as last resort- injectable peripheral opioid antagonist which doesn't cross blood-brain barrier and doesn't decrease analgesic effect (bowel obstruction is absolute contraindication)

Palliative Care

- Pain
  - nausea is typically transient so don't switch opioid too quickly, use antidopaminergic agents- metoclopramide or prochlorperazine
  - TCA's, SNRI's, SSRI's, and antiepileptics have benefit in neuropathic pain
  - opioid-unresponsive visceral pain (vague, dull, difficult to localize) can be treated with glucocorticoids
  - for bony metastases: consider NSAID's, glucocorticoids, bisphosphonates

Palliative Care

- Dyspnea
  - subjective sense of breathlessness
  - identify / treat sources
  - oxygen therapy is effective if patient is hypoxic
  - systemic opioids are standard of care
- Nausea
  - see table 25
- Depression
  - grief and demoralization are expected but pathologic depression is NEVER normal
  - helplessness, hopelessness, worthlessness, guilt, and anhedonia are signs of depression
  - see table 26

Palliative Care

- Nausea

Treatment of Nausea in the Palliative Care Patient

Cause of Nausea	Mediating Receptor Pathway	Treatment
Gut wall stretching or dilatation (constipation, bowel obstruction, ileus)	Dopamine type 2 (D_2) receptors in the gastrointestinal tract	Antidopaminergic antiemetics (metoclopramide, prochlorperazine, haloperidol)
Gut mucosal injury (radiation, chemotherapy, infection, inflammation, direct tumor invasion)	Serotonin (5-hydroxytryptamine-3 [5-HT_3]) receptors in the gastrointestinal tract	Serotonin antagonists (ondansetron, granisetron)
Drugs, metabolic by-products, bacterial toxins	D_2 receptors, 5-HT_3 receptors, and neurokinin type 1 receptors in the chemoreceptor trigger zone	Antidopaminergic antiemetics and serotonin antagonists
Motion sickness, labyrinthine disorders	Histamine type 1 (H_1) receptors and muscarinic acetylcholine receptors in the vestibular system	Anticholinergic antiemetics (scopolamine, diphenhydramine, promethazine)
Anticipatory nausea	Unknown, presumed cerebral cortex	Benzodiazepines
Increased intracranial pressure	Unknown	Glucocorticoids

Palliative Care

- Depression

Grief Compared with Depression in Terminally Ill Patients

Characteristics of Grief	Characteristics of Depression
Patients experience feelings, emotions, and behaviors that result from a particular loss.	Patients experience feelings, emotions, and behaviors that fulfill criteria for a major psychiatric disorder; distress is usually generalized to all facets of life.
Almost all terminally ill patients experience grief, but only a minority of patients develop full-blown affective disorders requiring treatment.	Major depression occurs in 1%-53% of terminally ill patients.
Patients usually cope with distress on their own.	Medical or psychiatric intervention is usually necessary.
Patients experience somatic distress, loss of usual patterns of behavior, agitation, sleep and appetite disturbances, decreased concentration, and social withdrawal.	Patients experience similar symptoms, plus hopelessness, helplessness, worthlessness, guilt, and suicidal ideation.
Grief is associated with disease progression.	Depression has an increased prevalence (up to 77%) in patients with advanced disease; pain is a major risk factor.
Patients retain the capacity for pleasure.	Patients enjoy nothing.
Grief comes in waves.	Depression is constant and unremitting.
Patients express passive wishes for death to come quickly.	Patients express intense and persistent suicidal ideation.
Patients are able to look forward to the future.	Patients have no sense of a positive future.

Palliative Care

- Anorexia
  - altered neurohormonal inflammatory milieu
  - artificial nutrition does not alter morbidity/mortality
  - pharmacotherapy (effective in 20-30%) progestins, dronabinol, and glucocorticoids
- Delirium
  - identify and treat precipitants
  - reorient, normalize sleep-wake cycles
  - use first-generation antipsychotics (haloperidol, chlorpromazine)

Common Symptoms

- 50% of all visits are symptoms specific (25% of these are related to pain)
- 1/3 of all symptom complaints remain unexplained but nearly 75%, regardless of symptom type, resolve in 2 weeks

Common Symptoms

- Chronic Non-cancer Pain
  - with or without clear precipitant > 3 months
  - neuropathic, nociceptive, and central (overlap exists)
  - *neuropathic pain* (burning, searing, tingling) and follows nerve distribution and exhibits numbness or allodynia (sensitivity to non-noxious stimuli)
  - *nociceptive pain* (**somatic**- joints, bones, muscles and other soft tissues and **visceral**- internal organs) wide sensory experience
  - *central pain* caused by CNS dysfunction at time of insult or delayed (months or years) wide spectrum of descriptions and often diffuse

Common Symptoms

- Chronic Non-cancer Pain
  - full H & P- “red flags” include pain worse at night (cancer), fever, or weight loss
  - assess for depression, psychosocial contributions, and functional impairment
  - nearly all pain management guidelines start with introducing an exercise program (evidence-based and confirmed via Cochrane reviews)
  - heat/ice, TENS, massage*, acupuncture*, chiropractic- *supported by low-quality evidence
  - psychologic disease does not invalidate pain complaints
  - CBT (mindfulness, cognitive restructuring, relaxation techniques) consistently recommended for chronic pain treatment

Common Symptoms

- Chronic Non-cancer Pain
  - *neuropathic:* capsaicin, lidocaine, TCA's, gabapentin and pregabalin (1st line- fewer side effects), SNRI's duloxetine and venlafaxine used in DM2, opioids (limit to low risk patients)
  - *nociceptive:* acetaminophen → NSAIDs
  - *central:* multimodal pain management, neuromodulators seem most effective

Common Symptoms

- Chronic Non-cancer Pain
  - dramatic increase in opioid prescribing and adverse events (60% occur in patients taking medication as prescribed in acceptable dose ranges) (50% of overdoses associated with concurrent sedative-hypnotic use)
  - no evidence to support use of long-term opioids in treatment of chronic pain
  - if opioids are warranted must risk stratify patient
  - physicians must have fortitude to avoid prescribing opioids to those at significant risk or those who demonstrate adverse events or consistent aberrant behavior

DIRE Score: Patient Selection for Chronic Opioid Analgesia

Factor[a]	Explanation
*D*iagnosis	1 = Benign chronic condition with minimal objective findings or no definite medical diagnosis. Examples: fibromyalgia, migraine, nonspecific back pain 2 = Slowly progressive condition concordant with moderate pain, or fixed condition with moderate objective findings. Examples: failed back surgery syndrome, back pain with moderate degenerative changes, neuropathic pain 3 = Advanced condition concordant with severe pain with objective findings. Examples: severe ischemic vascular disease, advanced neuropathy, severe spinal stenosis
*I*ntractability	1 = Few therapies have been tried and the patient takes a passive role in his/her pain management process. 2 = Most customary treatments have been tried, but the patient is not fully engaged in the pain management process or barriers are present (insurance, transportation, medical illness). 3 = Patient is fully engaged in a spectrum of appropriate treatments but with inadequate response.
*R*isk	(R = Total of P + C + R + S below)
*P*sychological:	1 = Serious personality dysfunction or mental illness interfering with care. Example: personality disorder, severe affective disorder, significant personality issues 2 = Personality or mental health interferes moderately. Example: depression or anxiety disorder 3 = Good communication with clinic. No significant personality dysfunction or mental illness
Chemical health:	1 = Active or very recent use of illicit drugs, excessive alcohol, or prescription drug abuse 2 = Chemical coper (uses medications to cope with stress) or history of chemical dependency in remission 3 = No chemical dependency history. Not drug-focused or chemically reliant
*R*eliability:	1 = History of numerous problems: medication misuse, missed appointments, rarely follows through 2 = Occasional difficulties with compliance but generally reliable 3 = Highly reliable patient with medications, appointments, and treatments
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Social support:	1 = Life in chaos. Little family support and few close relationships. Loss of most normal life roles 2 = Reduction in some relationships and life roles 3 = Supportive family/close relationships. Involved in work or school and no social isolation
*E*fficacy	1 = Poor function or minimal pain relief despite moderate to high doses 2 = Moderate benefit with function improved in a number of ways (or insufficient information [hasn't tried opioid yet or very low doses or too short of a trial]) 3 = Good improvement in pain and function and quality of life with stable doses over time

[a]For each factor, rate the patient's score from 1 to 3 based on the explanations in the right-hand column. Total score = D + I + R + E. Score of 7-13: Not a suitable candidate for long-term opioid analgesia. Score of 14-21: Good candidate for long-term opioid analgesia.[b]

Common Symptoms

- Medically Unexplained Symptoms
  - “time-consuming, challenging, frustrating”
  - higher prevalence in women with lower formal education
  - high risk of over-utilization of health care system
  - overlap with somatic symptom disorder and illness anxiety disorder
  - chest pain, fatigue, dizziness, insomnia, abdominal pain, and numbness are most common

Common Symptoms

- Medically Unexplained Symptoms

Diagnostic Criteria for Somatic Symptom Disorder and Illness Anxiety Disorder

Somatic Symptom Disorder	Illness Anxiety Disorder
At least 1 somatic symptom causing distress or interference with daily life	Preoccupation with having or acquiring an illness
Excessive thoughts, behaviors, and feelings related to the somatic symptom(s):	Somatic symptoms are not present or, if present, are only mild in intensity
Disproportionate or persistent concern about seriousness of symptoms	
Persistent high level of anxiety about health	
Excessive focus of time and energy on health concerns	
Persistent somatic symptoms for at least 6 months (the same somatic symptom does not have to persist for 6 months)	

Common Symptoms

- Medically Unexplained Symptoms
  - management requires therapeutic alliance
  - underlying psychological distress should be assessed frequently and treated as appropriate
  - antidepressants and exercise yield positive results
  - frequent scheduled appointments

Common Symptoms

Follow-up Evaluation of the Patient with Medically Unexplained Symptoms

Category	Issue	How?	How Often?	Notes
History	Adherence and response to negotiated treatment plan	Ask about level of old symptoms and progress with stated goals	Every week initially until patient is stable, then progressively lengthen interval of visits to 4-12 weeks as tolerated by patient	Help the patient to develop new short-term goals to achieve long-term goals as he or she achieves current goals
	New comorbid organic disease	Monitor for any change in patient's symptoms	Each visit	
	Exploration of nonsomatic symptoms	Show preferential interest in the psychosocial aspects of the patient's story	Each visit	Most will change from a physical symptom focus to a psychosocial focus after 3-4 months
Physical examination	Physical status	Perform a brief physical examination focused on patient's old symptoms	Each visit	
	New comorbid organic disease	Perform a brief physical examination to assess for organic disease pertinent to any change in patient's history, focusing on new signs rather than new symptoms	Each visit	
Laboratory tests	New comorbid organic disease	Order laboratory tests only as needed for new signs	As needed	Recognize that most symptoms will not require laboratory investigations

Follow-up Management of the Patient with Medically Unexplained Symptoms

Category	Issue	How?	How Often?	Notes
Nonpharmacologic therapy	Maintaining an effective relationship with the patient	Elicit and address the patient's emotional concerns; use a negotiated rather than a prescriptive approach; tailor care to patient's personality; address your own negative reactions to the patient.	Each visit	Monitor the provider-patient relationship regularly as you would, for example, monitor blood pressure in a patient with hypertension. Ask, "So how is all this going; how are you and I working together?" Examples of indicators of an effective relationship are adherence to the treatment plan, friendliness, improved eye contact, positive statements about the provider and the treatment.
	Dissociating treatment regimen from symptoms	Schedule regular, consistent, time-contingent visits rather than ad-hoc (as-needed) visits; give all medications on a scheduled rather than on an as-needed basis.	Each visit	Titrate number of scheduled visits and dosages of different aspects of treatment to patient's needs and progress.
Pharmacologic therapy	MUS symptoms	Consider lowest effective dose of antidepressant and nonnarcotic drugs.	Each visit	Minimize or avoid use of narcotics and tranquilizers.
	Comorbid depression and anxiety	Use full doses of SSRIs or other related antidepressants. If depression has not fully remitted after 6-8 weeks, add a second antidepressant from a different class and titrate to full dose (consider drug interactions). If this is not effective, mental health consultation should be obtained.	As needed	
Patient education	Overall management	Review patient's diary and facilitate understanding of how his or her thoughts, emotions, and behaviors are related to symptoms.	Ongoing	
	Education and treatment plan	Educate the patient so that the patient understands the plan of care and its purpose.	Each visit	
	Reinforcing patient commitment to treatment	Give appropriate praise for commitment behavior such as completing homework; address noncommittal behavior, such as not keeping appointments or visiting an acute care facility without prior discussion.	Each visit	
	Reviewing and revising patient goals	Reinforce previous short-term goals or negotiate new ones to operationalize patient's long-term goals.	Each visit	Help patient to identify solutions to roadblocks.
	Negotiating new plans	Negotiate plans to adjust physical activity; recommend relaxation techniques; refer for physical therapy.	Each visit	Continuously encourage the patient to add new healthy behaviors and to progress in what he or she is already doing.

MUS = medically unexplained symptoms; SSRI = selective serotonin reuptake inhibitor.

Common Symptoms

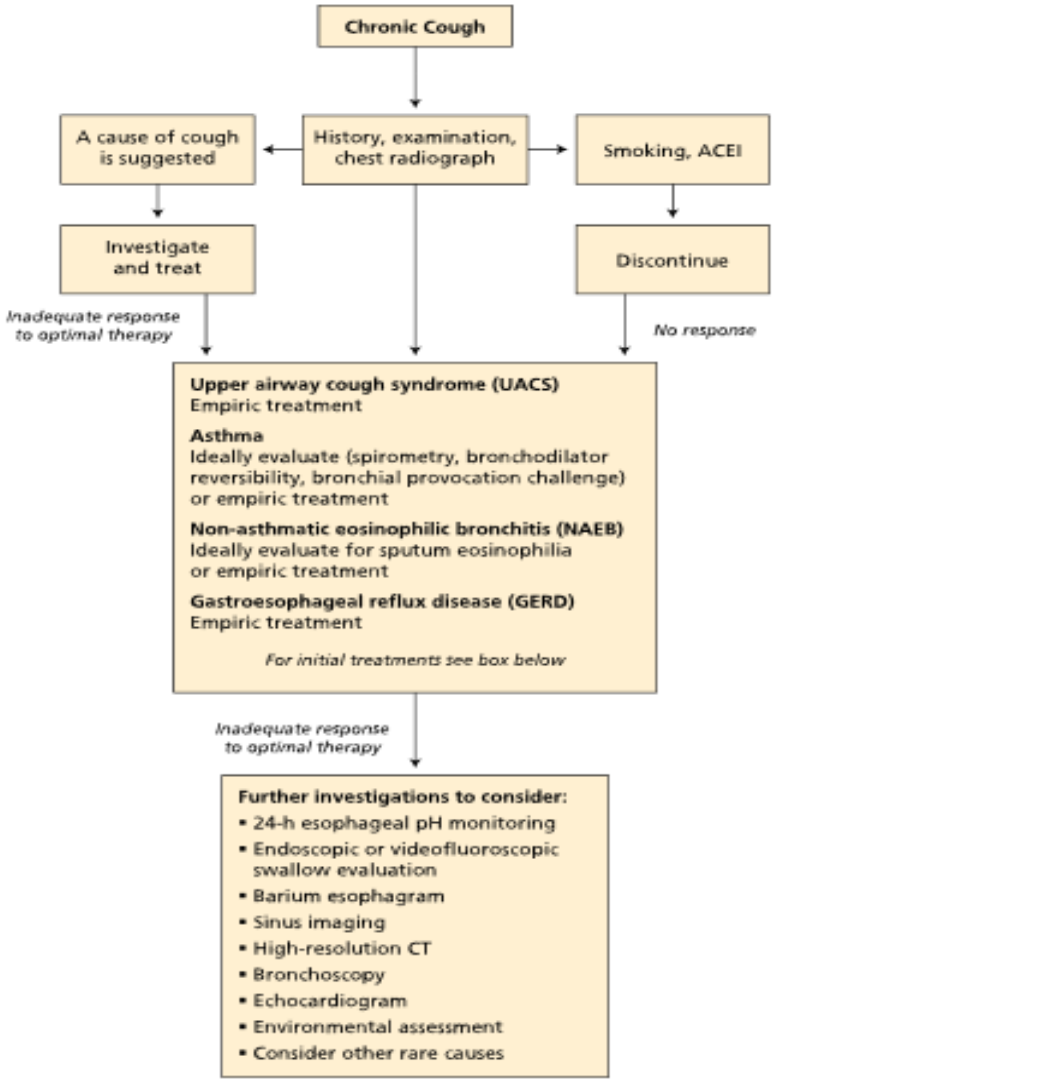
- Cough
  - 30 million annual visits and billions of $$$$
  - acute <3 weeks, subacute 3-8 weeks, chronic >8 weeks
  - *acute-* viral URI's (rhinosinusitis, pharyngitis) and acute bronchitis most common causes
  - purulent sputum does NOT reliably differentiate between viral and bacterial etiologies
  - cough associated with acute bronchitis may persist for up to 8 weeks because of bronchial hyperreactivity

Common Symptoms

- Cough
  - cough plus…fever, constitutional symptoms, or abnormal PE findings are indicative of LRT infection warranting a CXR
  - 15% of patients on ACE-I's will have cough which can persist for 4 weeks after d/c (use ARB instead)
  - symptoms should be treated supportively with ipratropium, cromolyn, 1st generation antihistamines
  - review of 17 trials concluded that centrally-acting (codeine, dextromethorphan) or peripheral acting (moguisteine) therapy do not improve cough
  - beta-2 agonists should only be used if cough is accompanied by wheezing

Common Symptoms

- Cough
  - *subacute-* common after infection (B. pertussis: paroxysms and post-tussive emesis)
  - *chronic-* 4 common causes:
    - upper airway cough syndrome (UACS)
    - asthma
    - nonasthmatic eosinophilic bronchitis (NAEB)
    - gastroesophageal reflux disease (GERD)
  - obtain CXR in patients with chronic cough
  - opioids, dextromethorphan, guaifenesin have shown benefit in chronic cough
  - gabapentin can be used in refractory chronic cough (4 weeks for onset of action)


Chronic Cough
A cause of cough is suggested
History, examination, chest radiograph
Smoking, ACEI
Investigate and treat
Discontinue
Inadequate response to optimal therapy
No response
Upper airway cough syndrome (UACS)
Empiric treatment
Asthma
Ideally evaluate (spirometry, bronchodilator reversibility, bronchial provocation challenge) or empiric treatment
Non-asthmatic eosinophilic bronchitis (NAEB)
Ideally evaluate for sputum eosinophilia or empiric treatment
Gastroesophageal reflux disease (GERD)
Empiric treatment
For initial treatments see box below
Inadequate response to optimal therapy
Further investigations to consider:
• 24-h esophageal pH monitoring
• Endoscopic or videofluoroscopic swallow evaluation
• Barium esophagram
• Sinus imaging
• High-resolution CT
• Bronchoscopy
• Echocardiogram
• Environmental assessment
• Consider other rare causes
General considerations:
• Optimize therapy for each diagnosis
• Check compliance
• Due to possibility of multiple causes, maintain all partially effective treatments
Initial treatments:
UACS: antihistamine/decongestant
Asthma: inhaled glucocorticoid, bronchodilator, LTRA
NAEB: inhaled glucocorticoid
GERD: proton pump inhibitor, diet/lifestyle

Common Symptoms

- Fatigue and Systemic Exertion Intolerance Disease
  - exceeding common with broad differential
  - history and PE guide diagnostic testing
  - initial lab testing may include CBC, TSH, electrolytes, glucose, creatinine, LFT's
  - SEID- unknown cause F.K.A. chronic fatigue syndrome
  - SEID diagnosis: 1) decreased functional abilities coupled with profound fatigue not relieved by rest, 2) post-exertional malaise, and 3) unrefreshing sleep… PLUS cognitive impairment or orthostatic impairment
  - SEID treated with CBT, exercise, methylphenidate and identification and treatment of comorbidities

Common Causes of Fatigue

Lifestyle
Sleep deprivation; poor sleep habits
Alcohol
Extremes of activity
Drug dependency (overuse and withdrawal)
Medical
Chronic liver and kidney disease
Cancer
Anemia
Chronic lung disease; hypoxemia
Hyperglycemia; uncontrolled diabetes mellitus
Thyroid disorder (hyper- and hypothyroidism)
Medication side effects
β-blockers
Antihistamines
Antidepressants
Benzodiazepines
Antipsychotics
Obesity
Heart failure
HIV/AIDS
Psychological
Depression
Anxiety
Stress

Common Symptoms

- Dizziness
  - vertigo (50%)
  - presyncope (4-14%)
  - disequilibrium (1-16%)
  - nonspecific dizziness
- dizziness is most common symptom linked to a missed diagnosis of stroke
- acute vestibular syndrome (AVS) has rapid onset >24 hours with associated nystagmus, gait unsteadiness, nausea, vomiting, and intolerance to head movement
- AVS lacks focal neuro deficits and can be caused by vestibular neuronitis, labyrinthitis, AND brainstem/cerebellar infarction/hemorrhage

Common Symptoms

- Dizziness- Vertigo
  - illusion of personal or environmental movement
  - aggravated by head movement and associated with nausea
  - perform Dix-Hallpike to confirm diagnosis
  - *peripheral:*
    - BPPV (debris in posterior semi-circular canal, 10-30 seconds in duration)
    - vestibular neuronitis/labyrinthitis (follows viral illness affecting cranial nerve VIII, more severe/prolonged symptoms)
    - Meniere's (vertigo, hearing loss, tinnitis), perilymphatic fistula, schwannoma, herpes zoster, migraine, aminoglycoside toxicity

Common Symptoms

- Dizziness- Vertigo
  - treat BPPV with Epley maneuver
  - early referral to vestibular rehabilitation
  - pharmacotherapy ineffective for cure but may be used symptomatically (clonazepam, diazepam, meclizine, prochlorperazine)
  - *central:* (obtain MRI if suspected)
    - 20% of strokes located in posterior fossa and predominant symptom is dizziness
    - identify RF's: DM2, HTN, hyperlipidemia
    - vertebrobasilar stroke associated with dysarthria, dysphagia, diplopia, weakness, or numbness
    - other causes: demyelinating diseases, optic neuritis, Wernicke, encephalitis

Interpretation of Dix-Hallpike Maneuver Findings in Evaluation of Vertigo

Characteristic	Peripheral Disease	Central Disease
Latency of nystagmus[a]	2-40 s	No latency
Duration of nystagmus	<1 min	>1 min
Severity of symptoms	Severe	Less severe
Fatigability[b]	Yes	No
Direction of nystagmus	Unidirectional, mixed upbeat and torsional with a small horizontal component[c]	Direction of nystagmus may depend on direction of gaze; may be purely vertical or horizontal without a torsional component

[a]Time to onset of nystagmus after positioning the patient.

[b]Decrease in the intensity and duration of nystagmus with repeated maneuvers.

[c]In benign paroxysmal positional vertigo, this pattern of nystagmus is provoked with the affected ear positioned downward when the posterior semicircular canal is involved (most common); when the anterior semicircular canal is involved, nystagmus is mixed downbeat and torsional with the affected ear positioned upward.

Common Symptoms

- Dizziness- Presyncope
  - near loss of consciousness without loss of postural tone
  - similar pathophysiology to syncope and evaluated similarly
- Dizziness- Disequilibrium
  - unsteadiness or sense of imbalance
  - multifactorial: impaired vision, hearing, motor weakness, proprioreception, joint pain, orthostasis, polypharmacy, neuropathic disease
  - treated with physical rehabilitation and mobility aides

Common Symptoms

- Dizziness- Nonspecific and Chronic Subjective Dizziness
  - Associated with wide variety of medical and psychological conditions
  - CSD considered if >3 months
  - CSD treated with CBT, vestibular/balance rehabilitation, SSRI's

Common Symptoms

- Insomnia
  - inability to initiate or maintain adequate sleep
  - H & P directs testing…look for associated OSA, RLS, hypothyroidism, arthritis, cardiopulmonary disease, depression
  - medication and substance use must be reviewed
  - 2 week sleep diary aides in identifying modifiable behaviors
  - treat with counseling of good sleep hygiene, CBT, pharmacotherapy (if behavioral therapy fails)

Techniques for Good Sleep Hygiene

During the Day
Ensure adequate exposure to natural light
Avoid napping
Avoid the following close to bedtime:
Substances that may fragment sleep (caffeine, nicotine, alcohol, pseudoephedrine)
Vigorous exercise
Large meals
Emotionally upsetting activities or conversations

At Bedtime
Establish a regular relaxing bedtime routine (30 minutes)
Associate the bed and the bedroom with sleep
Keep the bedroom quiet and dark
Keep stable bedtime and arising time
Spend no more than 20 minutes awake in bed
Spend no more than 8 hours in bed
Avoid use of television, radio, computer, or phone (texting) in bed

FDA-Approved Prescription Drug Treatment for Insomnia

Agent[a]	Usual Dosage	Onset of Action[b]	Duration of Action[c]	Notes
Benzodiazepines (oral)				
Estazolam	1-2 mg	Slow	Intermediate	
Flurazepam	15-30 mg	Rapid	Long	
Quazepam	7.5-15 mg	Slow	Long	
Temazepam	7.5-30 mg	Slow	Intermediate	
Triazolam	0.125–0.5 mg	Rapid	Short	Short-acting benzodiazepines have been associated with an increased risk of anterograde amnesia
Nonbenzodiazepines				
Zolpidem				
Oral tablet	5-10 mg	Rapid	Short	
Extended-release oral tablet	6.25-12.5 mg	Rapid	Intermediate	
Sublingual				
Intermezzo (Transcept Pharmaceuticals)	1.75-3.5 mg	Rapid	Short	Indicated for as-needed use for treatment of middle-of-the-night insomnia with ≥4 h of sleep time remaining
Edluar (Meda Pharmaceuticals)	10 mg	Rapid	Short	
Oral spray	10 mg	Rapid	Short	
Eszopiclone	1-3 mg	Rapid	Intermediate	The recommended initial dose was reduced to 1 mg because of prolonged impaired driving skills, memory, and coordination at the previously recommended 3-mg dose
Zaleplon	10-20 mg	Rapid	Short	
Orexin-Receptor Antagonist				
Suvorexant	5-20 mg	Slow	Long	The recommended initial dose is 10 mg; the daily dose should not exceed 20 mg
Antidepressant				
Doxepin	3-6 mg	Rapid	Intermediate	
Melatonin Agonist				
Ramelteon	8 mg	Rapid	Short	

*All agents classified as schedule C-IV by the Drug Enforcement Agency (DEA) except doxepin and ramelteon, which are not scheduled.

Common Symptoms

- Syncope
  - nontraumatic complete transient loss of consciousness and loss of postural tone
  - abrupt onset, and recovery is spontaneous, rapid, and complete
  - caused by global cerebral hypoperfusion
  - *neurally-mediated:* occurs with standing and associated with nausea, lightheadedness, and warmth
  - *cardio:* most common cause is arrhythmia, lacks prodrome
  - *orthostatic:* ↓ 20mmHg in SBP, ↓ 10mmHG DBP

Classification of Syncope

Neurally Mediated Syncope (Reflex Syncope)

Vasovagal

Situational

Carotid sinus syndrome

Orthostatic Syncope

Primary

Secondary

Drug-induced

Volume depletion

Cardiac Syncope

Tachyarrhythmia or bradyarrhythmia

Atrioventricular block

Structural heart disease

Valvular heart disease (aortic stenosis)

Cardiomyopathy

Hypertrophic cardiomyopathy

Atrial myxoma

Ischemia

Other (saddle pulmonary embolism, aortic dissection, pulmonary hypertension)

Cerebrovascular Syncope

Vertebrobasilar transient ischemic attack

Subclavian steal

Psychiatric Disease (Pseudosyncope)

Unknown

Common Symptoms

- Syncope
  - substantiate true syncope
  - heart sounds and carotid massage- >3 second pause +/- 50 mmHg drop in SBP to diagnose carotid hypersensitivity- AVOID in patients with strokes/TIA's!
  - ECG and echo (if structural disease suspected) are starting points for evaluation- these will identify cause in 50% of patients
  - adding telemetry (95%), head CT (63%), cardiac enzymes (95%), EEG, and carotid US aided diagnosis in **<2%** and altered management in **<5%**
  - THE MOST VALUABLE DIAGNOSTIC AND MANAGEMENT TEST IN PATIENTS WITH SYNCOPE IS **POSTURAL BLOOD PRESSURE MEASUREMENT**

Common Symptoms

- Syncope
  - DON'T perform neuroimaging with simple syncope and normal neurologic exam
  - more prolonged event monitor ELR / ILR improve diagnostic yield over 24-48 hour telemetry
  - tilt-table testing may be useful in reflex syncope triggered by standing with a single unexplained episode (construction workers, surgeons), recurrent syncope in the absence of organic heart disease, recurrent syncope with heart disease if cardiac causes thoroughly excluded (low sensitivity and specificity limit diagnostic use)
  - *cardiac* syncope associated with 1-year mortality of 18-33%

Common Symptoms

- Syncope – 40% admitted
  - risk stratify with "ROSE"- Risk stratification Of Syncope in the Emergency department (1 month risk for MI, life-threatening arrhythmia, pacemaker implantation, PE, SAH, ICH, need for blood transfusion, or acute surgical procedure)
    - BNP $\geq$ 300pg/mL
    - bradycardia <50 BPM
    - positive FOBT
    - anemia $\leq$ 9g/dL
    - chest pain with syncope
    - ECG with Q waves (not in lead III)
    - O2 saturation < 94% ambient air

High-Risk Criteria for the Patient with Syncope

Features suggesting arrhythmic syncope
Clinical: syncope during exertion, palpitations at time of syncope, family history of sudden death
Electrocardiography: nonsustained ventricular tachycardia, bifascicular block, sinus bradycardia (<50 beats/min or sinoatrial block), prolonged QT interval
Severe structural or coronary artery disease
Heart failure
Low ejection fraction
Previous myocardial infarction
Comorbidities
Severe anemia
Electrolyte disturbances

Common Symptoms

- Lower Extremity Edema
  - result of ↑hydrostatic pressure, ↓ oncotic pressure, ↑ capillary permeability, lymphatic obstruction
  - systemic- heart failure, nephrosis, cirrhosis, CKD, OSA, medications typically bilateral
  - VTE and cellulitis most common causes of unilateral edema
  - treatment aimed at underlying condition
  - chronic venous insufficiency- insidious onset, pain and heaviness often noted
  - CVI treated with compression, elevation, and exercise (avoid diuretics), ablation therapy indicated if refractory for >6 months and retrograde valvular flow >0.5 seconds in duration

MKSAP 17 Questions

- 3, 12, 15, 16, 18, 21, 29, 30, 36, 41, 48, 55, 59, 63, 66, 67, 74, 75, 77, 80, 82, 84, 89, 90, 91, 95, 96, 100, 101, 105, 107, 113, 122, 127, 128, 132, 134, 136, 139, 141, 143, 146, 151, 155, 157, 164