The Second Edition of The Colorado M.E.S.A. Initiative’s Pearls & Protocols was authored by Gregory Gahm, MD, with Donald Murphy, MD

We also wish to acknowledge the following geriatricians who contributed materially to the first edition:

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Please email or print and share it freely with your colleagues.

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Introduction to the M.E.S.A. Pearls & Protocols
A guide to primary care for older adults

The Colorado M.E.S.A. (“Medicare Experts/Senior Access”) Initiative is made possible through a generous grant from the Colorado Health Foundation, as well as supplemental funding from the Kaiser Permanente Foundation and Caring for Colorado. The Alzheimer’s Association Colorado Chapter, the premier source of information and support for the more than 72,000 Coloradans with Alzheimer’s disease, their families and caregivers, is the grantee and conduit for this special program. Our mission is to reach out to primary care providers who see older adults throughout the state, especially those working in underserved and rural areas. Our hope and intention is to teach others to become more adept and comfortable treating seniors, from both administrative and clinical perspectives.

You may have been among the hundreds of providers and office staff members who participated in our face-to-face workshops or who visited our website since 2009. If so, you’re already familiar with the first edition of our Pearls & Protocols.

Now, we are pleased to share with you the Second Edition of this compilation of clinical Pearls & Protocols for taking care of older adult patients. To create this document, we started with the solid information published in the first edition and updated it based on our day-to-day experience melded with the very latest information from clinical journals, professional organizations, and research literature.

The Pearls & Protocols herein cover the conditions and disease states most frequently presented by seniors. They were selected for one of two reasons:

1. This is among the most important information with which to be familiar when caring for seniors.
2. We believe these topics deserve more focus than we’ve seen widely presented in current literature.

As physicians ourselves, we understand what it’s like for you as a primary care provider. We’re cognizant of the dynamics that drive clinicians. And we believe that the Pearls & Protocols offered here represent a reasonable compromise within the balancing act that we must confront day in and day out. We’ve weighed what the literature tells us against our own practical experience. For example:

- **Diagnostic certainty.** Is it realistic to be absolutely sure what’s going on with your patient, or is the better choice to say, “let’s give this a try and see?”
- **Defensive medicine.** Are you concerned about being sued? And, if so, how does that impact your clinical decisions?
- **Follow-up frequency.** Will you see this patient again soon, or is it likely to be 3-4 months before you know the impact of the changes you’re making?
- **Cost of treatment.** Money is almost always an issue for senior patients. How do you balance the cost of medications and treatments with the clinical need and the patient’s pocketbook?

We hope you’ll find this information valuable and practical as you serve Colorado seniors in your practice. Please share this booklet, and the digital version, with your colleagues and the support staff in your office.

Thanks for the good work you’re doing out there every day,

Donald Murphy, MD
M.E.S.A. Founder and Faculty Member

Gregory Gahm, MD
M.E.S.A. Consulting Faculty Member, Author
Hello, Colorado Primary Care Providers.

The Colorado M.E.S.A. Initiative addresses one of the longstanding needs that have been identified by our family members throughout the years: limited access to primary care for individuals with dementia. This happens both in rural parts of Colorado as well as the metro areas. Our families often struggle to find a physician to monitor a person’s care once a diagnosis of Alzheimer’s is made. We are proud to be a part of this program supporting primary care providers throughout Colorado.

Our organization has been in existence for over 30 years now. Our mission is to provide information, education, and support to families dealing with Alzheimer’s disease and to educate the public about the epidemic of Alzheimer’s that’s coming our way in the next 10 to 20 years. There is also an arm of the Association providing extensive training to healthcare professionals throughout the state. The Association is actively engaged in strategic physician outreach to better inform providers of the essential services we offer to both patients and families faced with a dementia diagnosis.

Because Alzheimer’s is such a long term disease, lasting typically from 8 to 12 years, we also focus a great deal on the care and health of caregivers—those individuals who are providing the bulk of care at home for a loved one with Alzheimer’s or another form of dementia (did you know that 70% of all Alzheimer’s care is provided in the home?). In most cases, these caregivers are older themselves and have health challenges of their own; the strain of caregiving is extensive. We provide a variety of programs and services that are designed to support patients as well as their caregivers throughout the duration of the disease.

The earlier we can work with an individual with Alzheimer’s disease and their family and caregivers, the better job we can do of helping them plan for what’s ahead. It’s our goal always to have referrals to the organization as early as possible after a diagnosis is made.

We know that your patients with Alzheimer’s disease and other dementias can place a great demand of time and attention on your busy practice. That’s why we’re here to help alleviate your burden. We encourage you to notify us with a brief (1-page) Rapid Referral Form each time you diagnose one of these patients. Our skilled and compassionate regional coordinators will make contact with the patient and their family members to help them through the shock and confusion they are likely to be experiencing. We will give them the tools and resources they need to make good decisions and face the day-to-day challenges of living with Alzheimer’s and related dementias, so your practice won’t have to worry about those aspects of care.

Please keep us top of mind; we are certain we’ll be able to make treating Alzheimer’s patients easier on you and your practice.

Visit our website at www.alz.org/co or phone our 24/7 Helpline at 800.272.3900 for more information.

Linda Mitchell
President and CEO
Geriatric Pearls & Protocols
# Colorado M.E.S.A. Initiative
## Pearls & Protocols, Second Edition
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Advance Directives

- Use the green Colorado MOST (Medical Orders for Scope of Treatment) form to help guide the discussion (obtain at www.ColoradoAdvanceDirectives.com).
- Providers (MD, DO, NP, PA, CNS) should have the discussion with the patient and/or family, guardian or proxy armed with information about end-of-life decisions, especially the dismal outcomes of CPR.
- Both parties should sign and date the form, updating it annually or whenever there is a significant change of condition.
- Explicitly describe the difference between “no CPR” and “no treatment” (see Appendix C).
- Don’t limit the discussion to the parameters on the MOST form if there are other likely situations that need to be addressed, such as dialysis, or aggressive diagnostic approaches for cancer, strokes, heart attacks or other significant conditions.
- MOST forms can be faxed or sent electronically and should follow the patient to all care settings.
- Though many seniors will opt for short-term mechanical ventilation, most would not want prolonged aggressive care.
- Community-dwelling patients who are emphatic about not wanting CPR should consider a DNR bracelet or necklace.
- In circumstances that allow it, consider a dysphagia waiver when the quality of life means more than survival with an altered texture diet.
- Encourage patients to talk to family members and close friends about their choices to avoid difficult emotional battles at the end of life.
- Consider using the Five Wishes workbook (www.AgingWithDignity.org) as a tool for patients to take home to think about the issues before demanding decisions.
- Watch the archived M.E.S.A. webinar titled, "Discussing End of Life Issues with Your Patients and Family Members" at www.ColoradoMESA.org for a spirited and informative conversation on this topic.
Anemia

- Anemia is common in the elderly, though an exact definition of what constitutes anemia in seniors is lacking. Many may hover around 10/30 for years without problems.
- Prolonged anemia may be a contributing factor for many conditions such as CHF, LVH, falls, MI, dementia, depression and increased mortality.
- To work up anemia, generally start with a CBC and basic history and exam. Further workup will depend on results and comorbidities.
- As a rough guide, the National Health and Nutritional Examination Study (NHANES) III found that 1/3 were due to a nutritional deficiency (e.g., iron, folate, B12), 1/3 were related to chronic diseases (especially chronic kidney disease [CKD]) and 1/3 were unexplained with a large portion of these being myelodysplastic syndrome.
- Unless there is an obvious etiology from the H&P, start by checking a CBC, then:
  - Low MCV: check iron, TIBC, ferritin (iron stores) and glomerular filtration rate (GFR)
  - High MCV: check B12, folate and liver function tests (LFTs)
  - Normal MCV, high RDW: check iron, TIBC, ferritin, B12, LFTs and GFR
- Review patient’s medications as a potential cause of anemia (refer to Appendix H).
- Iron replacement:
  - 325 mg daily is as effective as higher doses with fewer side effects
  - Replacement is augmented by adding Vitamin C (500 - 1000 mg qd)
  - Unless there is ongoing blood loss, iron stores should be replaced in 90 days
- For B12, oral replacement is almost always as effective as IM (1000 mcg qd). Consider starting replacement when the B-12 level is 350 or lower.
- Folate can be given at 1 - 5 mg qd. Treatment for 1 - 3 months will almost always completely replenish stores.
- Erythropoietin can be considered for patients with chronic anemia, CKD or some patients receiving chemotherapy, but should be discontinued when the HGB nears 36 to avoid associated excess mortality when given to persons with an HCT >36.
Anticoagulation Issues

Most topics below are common in long term care and based on 2012 CHEST Guidelines for Anticoagulation.

For warfarin, the therapeutic range for all indications is 2.0 – 3.0, not higher or lower.

Warfarin/anticoagulation + aspirin used concomitantly
- Mechanical valve patients with low bleeding risk
- Acute coronary syndrome
- Recent coronary stents or bypass surgery
- That’s it! All other conditions reviewed showed bleeding >> potential benefits.

Drugs to avoid (if possible) with patients on warfarin
- NSAIDs, including COX-2-selective NSAIDs
- Certain antibiotics (cephalosporins, Flagyl, Cipro, Levoquin, norfloxacin, amoxicillin, Augmentin, doxycycline, fluconazole)
- Selective serotonin reuptake inhibitors (SSRIs)
- Tramadol
- Complimentary medications (esp. coenzyme Q10, ginger, ginko, fish oil)
- Antiplatelet agents (e.g., ASA, clopidogrel, other antiplatelet agents or combinations) except in situations noted above

Testing INRs in patients with consistently stable INRs
- Test up to every 12 weeks rather than every 4

Elevated INRs in patients with consistently stable INRs
- With a single out-of-range INR of < 0.5 below or above therapeutic, continue the current dose and test the INR in 1 – 2 weeks
- 5.0 – 10 & no significant bleeding: hold Warfarin
- > 10.0: Low doses of oral Vitamin K (1.0 – 2.5 mg)

Primary & secondary prevention of cardiovascular disease
- Primary prevention, age > 50: low-dose ASA (75-100 mg/d)
- Established CAD: low-dose ASA or clopidogrel

Anticoagulation after hip or knee surgery (see Appendix I)
- Xa inhibitors (e.g., Xarelto, Eliquis) have numerous advantages over low molecular weight heparin (LMWH) and warfarin and should be considered the drug class of choice in going forward.
- Advantages:
  - More effective than Lovenox in head-to-head comparisons
  - Oral (10 mg once daily) is easier than injectable
  - Standard length of administration (12 days for post-knee, 35 days for post-hip)
  - More affordable ($8 per day vs $30 - $150 per day)
  - No labs to follow!
  - Far fewer drug-drug interactions than warfarin & few drugs that are used in LTC

Anticoagulation after stents
- Dual therapy with low-dose ASA plus another antiplatelet agent for the first year only
- For patients undergoing elective percutaneous coronary intervention (PCI) with stent placement, use ASA (75-325 mg/d) and clopidogrel for a minimum duration of 1 month (bare-metal stents) or 3 - 6 months (drug-eluting stents)

Anticoagulation after DVT or PE or to prevent recurrence
- Xarelto was approved (November ’12) for these indications, being as effective as warfarin and low molecular weight heparins. Though more expensive than warfarin ($250 vs $50 - $250/month with lab costs included), it has the advantages noted above. Dosing is 15 mg bid for 21 days, then 20 mg qd for the duration of treatment. Lower the dose with GRF < 45, weight < 120 pounds and over 75 years.
Antipsychotics

- Antipsychotics have only been approved by the FDA for schizophrenia and bipolar disorders, though more than 90% of their actual use in nursing homes is for off-label or “boxed warning” conditions, most notably something akin to “dementia with behaviors.”
  - Using these drugs for demented patients with behaviors is seldom useful and nearly doubles the risk of death over just 10 weeks of use (4.5 vs. 2.6%).
  - Centers for Medicare & Medicaid Services (CMS) and the Office of the Inspector General, US Department of Health and Human Services (OIG) are looking closely at both the enormous cost of these agents and the increased morbidity and mortality, leading to much more intense scrutiny.
  - Federal regulations require gradual dose reductions be attempted for all long term care (LTC) patients on these agents at least annually (twice in different quarters in their first year of use) unless there is explicit documentation to support that doing so would almost certainly lead to an imminent clinical decline or place others at significant imminent risk.
  - When any psychoactive agents are used, appropriate and specific target behaviors that place the patient or other residents at increased clinical risk must be clearly identified and meticulously tracked.
  - At least 2 nonpharmacologic interventions should be tried, given time to work and have results documented prior to administering any prn psychoactive drug.

- The proportion of LTC facility patients receiving these agents for off-label uses was added to the CMS Medicare Compare website for public viewing in 2012.

- A landmark study in 2006 found:
  - No significant difference between placebo, Seroquel, Zyprexa and Risperdal in terms of time to discontinuation of the drug or improvement on the clinical global impression (CGI) scale.
  - Seroquel wasn’t more effective than placebo (the others were barely better).
  - Placebo was better than the other three in terms of side effect profile and deaths.

- Before using any of these agents for off-labels uses, the medical durable power of attorney (MDPOA) or legal guardian should be provided with a consent form that includes the box warning and should sign that they understand both the intended benefits (spelled out specifically by the provider and care team), the potential risks, and an approximate time frame for determining effectiveness (Appendix O provides a sample form).

- Benefit/risk statements must be documented by providers with these drugs when:
  - Used for an off-label indication
  - Dosed above the CMS-approved maximum daily dose in nursing homes
  - Multiple psychoactive medications are used for the same indication

- A “failed” dose reduction is one where the potentially harmful behavior that places the patient or other residents at increased clinical risk reemerges as the dose is decreased. The behaviors and details should be clearly documented in the patient’s record.

- Antipsychotics should be dosed in a manner matching their pharmacokinetics, e.g.,
  - Seroquel and Geodon are short-acting, so are most effective when dosed tid (when given only at bedtime, they would likely be considered as inappropriate sedative/hypnotics by surveyors).
  - Risperdal’s and Haldol’s 20 - 24 hour half-lives make them excellent once daily drugs.
  - Zyprexa, and especially Abilify, have much longer ½-lives and should never be given more often than once a day (though they could be given less often and still be equally efficacious).
  - Risperdal is the most potent of the commonly used agents, while Seroquel is the least. Zyprexa, Haldol, Abilify and Geodon fall in between in roughly that order.
Anxiety

- Anxiety is a generic term used to describe excessive worrying leading to significant distress and impairment, making it difficult to function at the highest possible level.
- May occur as part of adjusting to new conditions or situations, part of a larger psychiatric disorder, or as a component of both advancing dementia and depression.
- Treating with drugs also has the potential for significant side effects. Medical conditions should be considered first, including other drugs that may be causing it. Anxiety is a known side effect of many medications, including:
  - Asthma drugs (e.g., albuterol and theophylline)
  - Corticosteroids
  - Benzodiazepines (e.g., Ativan, Xanax, Valium, others)
  - Antidepressants
  - Illicit drugs
  - Herbals (e.g., ma huang, St John’s wort, ginseng, belladonna, guarana)
- Counseling is often effective, but should be limited to those with an ability to retain information (e.g., not useful in dementia) and without major psychiatric disorders (e.g., schizophrenia). It is not intended to be frequent or ongoing, so if no meaningful, lasting improvement is seen within a few months, it should be discontinued.
- Search for nonmedical or environmental causes or conditions that exacerbate the problem, and then strategize ways to avoid or control them (e.g., a familiar face may trigger old memories in demented patients leading to anxiety as they try to figure it out or get away to get back to a time/place of comfort). Hot, cold, light, dark, shapes, people, foods – the list of potential reasons is long and hard to pin down.
- Anxious behaviors should be treated only when it offers more benefit than the substantial risks posed by using drugs. Annoying behaviors (repetitive questioning, cursing, yelling, trouble sleeping) or those difficult to view (e.g., continual pacing) do not generally place the person at risk and should not be treated with drugs.
- When choosing an agent to treat general anxiety disorders, the literature and most experts recommend a serotonin-norepinephrine reuptake inhibitor (SSRI or SNRI) as the agent of choice, followed by tricyclics and then benzodiazepines. If none of these work, some seizure medications have been tried. This is in contrast to most general practitioners who jump directly to benzos, either out of habit, prior training, or possibly overvaluing their sedating properties as a target goal of treatment.
- Summary of medical approach to treatment:
  1. Explicitly identify and document the anxious behaviors placing patient at risk.
  2. Consider eliminating other causes as noted above, including other medications.
  3. Discuss counseling as an option if/when appropriate for a defined period of time. If there is no improvement, consider medications with/without counseling.
  4. When choosing medications, start with an SSRI. Titrate every 6 - 8 weeks until symptoms are manageable, a maximum dose is reached, or side effects occur.
  5. If an SSRI does not work, transition to an SNRI and repeat step 2.
  6. If neither of these work, transition to either a tricyclic or a benzo. Titrate over 2 - 3 months until symptoms are manageable, a maximum dose is reached, or side effects occur.
- Whenever using a medication to treat anxiety, explicitly discuss treatment goals, intended benefits, and potential risks. Document both what you’ve discussed and with whom you discussed it.
Atrial Fibrillation (AFib)

- Atrial fibrillation occurs in approximately 6% of persons over 80 years of age.
- **Rhythm control offers no clinical advantage over rate control alone**, though rhythm control has significantly more side effects.
- Rate control is best achieved with a beta blocker. When beta blockers are ineffective or cannot be used, calcium channel blockers are the second choice with digoxin or a pacer distant third choices. Digoxin should not be considered a first line choice.
- Resting heart rates <110 are as effective as stricter control (<80) and easier to achieve.
- COPD is **not** a contraindication to the use of beta blockers.
- Amiodarone has **many more risks than benefits** in seniors, is not approved for AFib, has not been shown to benefit seniors and should be avoided. In rare cases if it is necessary, acquaint yourself with the **long list of side effects** and be prepared to monitor them.
- Most seniors will benefit from anticoagulation by decreasing their risk of stroke. This continues to be true even among very old, frail elders at risk for falling.
- For patients on warfarin who require frequent INRs, have unstable INRs, are often noncompliant, are on many other drugs, or cannot have INRs checked regularly: strongly consider using thrombin or factor Xa inhibitors which are as effective, require no lab testing, don’t require dosage adjustments and have fewer drug-drug interactions (**see Appendix B for a comparison table**).
- Transient AFib may occur with pulmonary insults (e.g., PE, pneumonia, bronchitis), alcohol or hyperthyroidism and often does not require long-term medication.
- In patients with AFib, the chance of having a stroke while on anticoagulation can be approximated with a CHADS₂ score (**see Appendix D**). As a rough approximation in seniors, anticoagulation decreases the chance for stroke by about 2/3, from roughly 4.45 strokes per 100 patient-years (no anticoagulation) to 1.72 (warfarin, Pradaxa or Xarelto). If the slight increased risk for hemorrhagic strokes are included, the number of strokes are still reduced by about 60% (4.45 vs. 2 strokes per 100 patient-years). Aspirin is only slightly better than placebo for stroke prevention.
Benign Prostatic Hypertrophy (BPH)

- Clinical manifestations (urinary frequency, nocturia, hesitancy, urgency, weak stream) typically appear gradually and are nonspecific.
- BPH has not been shown to be a risk factor for prostate cancer.
- Disorders with symptoms mimicking BPH include urethral stricture, prostate or bladder cancer, neurogenic bladder, stones and prostatitis (with or without UTI).
- Medical treatment includes two groups of drugs that can be used alone or in combination:
  1. Alpha blockers treat symptoms by relaxing smooth muscle
  2. 5-alpha-reductase inhibitors reduce prostate size over time
- Reserve “incontinence” drugs for men with low post-void residual volumes (PVR). If used, consider checking a PVR after use to look for an unintended obstructive process.
- Drugs with anticholinergic properties should be avoided if possible (refer to Appendix K) as they have a high likelihood of compounding urinary complaints.
- Saw palmetto has not been shown to be better than placebo, though the significant placebo effect of herbal therapies may warrant a time-limited trial.
- For men with significant progression of symptoms or without a good response within 1 - 2 years, surgical/invasive therapies should be considered.
- For further information on diagnosis, management and treatment of BPH, go to www.auanet.org/guidelines/bph.cfm
Bites, Animal and Human

- Clean the wound well with soap and water.
- Antibiotic ointments, 1% iodine or 1% benzalkonium chloride can be used to clean the wound along with copious, pressure irrigation.
- Deep puncture wounds usually require surgical exploration and/or debridement and should often be referred to a specialist.
- Leave cat and human bites open to the air unless they are oozing blood. Simple lacerations due to dog bites can usually be sutured or glued early. Alternatively, even these wounds can be kept open and cleansed regularly for 3 days prior to closure.
- Apply an ice pack for swelling for the first 48 hours. After that, if heat feels good for a few days, add heat (warm soaks, heating pads on low or moderate settings). Avoid applying high heat or leaving it on for more than 20 - 30 minutes at a time.
- Give a tetanus shot if the patient’s last shot was more than 5 years ago or if this information is unknown.
- Give hepatitis immune globulin and Hep B vaccine for persons bitten by another person who is positive for Hep B surface antigen. Give vaccine only if the Hep B status of the person who bit is unknown and the patient hasn’t already received the Hep B series.
- Have a reliable party observe the wound every day for the first 2 weeks for signs of infection. Watch for increasing pus, warmth, lymph nodes, pain, swelling or red streaks leading from the wound toward the heart.
- If it is a large animal bite, capture and observe the animal for 2 weeks for signs of rabies or other illness.
- Report wild animal bites – especially raccoons, skunks, foxes, bats and coyotes – to local animal control agencies due to concern about rabies.
- Report dog and cat bites if:
  - The animal is sick or a stray
  - The bite was unprovoked
  - There is no documentation that the animal had its rabies vaccinations
  - Circumstances surrounding the injury are suspicious or unclear.
- If the wound looks infected, make sure to draw aerobic and anaerobic blood cultures prior to starting antibiotics. *Wound cultures of uninfected bite wounds are not helpful.* Cultures should be obtained for wounds that look infected.
- Deep bite wounds (especially close to joints) should be xrayed for evidence of foreign bodies left behind (e.g., teeth).
- Antibiotic prophylaxis should be considered for deep puncture wounds, those with associated crush injury, wounds requiring surgical repair, on the hand, near bones or joints, cat bites and in immunocompromised patients.
Bites, Insects, Ticks or Bees

Consider immediate transfer to ER if there is a history of anaphylaxis or if patient is going into shock (low BP, dyspnea, cold clammy skin, cyanosis).

- Instruct those prone to being stung to watch for bad allergic reactions/call 911 if they:
  - Have trouble breathing, become hoarse, or start wheezing
  - Start swelling, especially around above the neck
  - Develop abdominal cramps, nausea, vomiting, or diarrhea
  - Feel dizzy or pass out
- In an emergency for those with known anaphylaxis, use an EpiPen or equivalent.
- Antihistamines may be used for 1 – 3 days to relieve itching.
  - Potent, short-acting agents for intense itching (eg, Hydroxyzine, Benadryl)
  - Non-sedating for less intense itching (eg, Claritin, Allegra)
  - Steroid burst/tapers should be reserved for severe cases
- Remove jewelry on affected extremity.
- Elevate extremities if swelling develops.
- If stinger is present, remove by gently scraping the site until it is removed – do not pluck or squeeze the stinger.
- Wash the site with soap and water.
- Apply ice or cold pack for swelling for the first 48 hours. After that, if heat feels good for a few days, add heat (warm soaks, heating pads on low or moderate settings). Avoid applying high heat or leaving it on for more than 20 - 30 minutes at a time.
- Topical creams, lotions or gels with calamine are good for decreasing itching.
- Use appropriate pain medications as required for several days.
- Watch carefully for signs of infection for the first week.
- If a tick is found embedded in the skin, use an extinguished match or coating of oil to get the tick to back out. Do not pull it out!

Blood/Body Fluid Exposure and Needle Sticks

- If a wound is present, wash with soap and water, alcohol or 1% iodine immediately and continue to flush the area with copious amounts of water for at least 3 – 5 minutes.
- For exposure in mouth, eyes or nose, rinse with water or saline for at least 5 minutes.
- Give a tetanus shot if the patient’s last shot was more than 5 years ago or if this information is unknown.
- Give hepatitis immune globulin and Hep B vaccine for persons bitten by another person who is positive for Hep B surface antigen. Give vaccine only if the Hep B status of the person who bit is unknown and the patient hasn’t already received the Hep B series.
- If there is a potential for HIV exposure:
  - Refer to the health department for further investigation and advice.
  - Save the needle and identity of anyone that may have used the needle.
  - Arrange for follow-up testing at 6 weeks, 3 and 6 months after exposure.
  - Watch for symptoms of HIV, including fever, enlarged lymph nodes, new sores on mucosal surfaces, unexplained weight loss, new headaches, muscle or joint pains, malaise or sore throat.
Burns/Thermal

• Estimate how much surface area is affected using the Rule of Nines:
  - 1%: groin
  - 9%: head, each arm
  - 18%: each leg, chest or back

• Determine whether or not the burn was from a high-voltage source.

• Investigate the possibility of inhalation injury of superheated air.

If >30% of the body is burned or there is suspicion of inhalation of superheated air or a high voltage burn, arrange immediate emergency transport to a burn unit.

• For lesser burns, use pain meds for 2 – 7 days unless there are known contraindications, such as:
  - NSAIDS: previous reactions or hypersensitivity (e.g., asthma trigger), chronic kidney disease stage 3 – 6, significant HTN, cardiovascular disease or CHF
  - Acetaminophen: liver disease
  - Opioids may be necessary for a brief period for deeper or larger burns

• Elevate the burn area above the level of the heart for several days to decrease swelling.

• Immediately run cool water on the burn and then apply a cool pack (not ice) for 1 – 2 days. Cautiously cool burns that cover >10% of body area to avoid hypothermia.

• Large and/or deep burns are associated with significant fluid losses and may require IV fluids briefly if the patient is unable or unwilling to ingest enough water.

• Remove jewelry on affected extremity if there is a potential for swelling.

• Avoid gels and ointments to the area.

• Vanilla, honey, aloe vera and Milk of Magnesia have all be shown to relieve pain.

• Keep the area clean, dry and open to the air. Clean wounds with mild soap and water.

• Watch for signs of infection.

• Do not puncture or drain blisters.

• Topical antibiotics should be used only for burns that are not superficial (i.e., not for sunburns or superficial partial-thickness burns with intact skin).

• There is no role for steroids (topical or systemic) for minor burns.

• Consider whether or not their tetanus immunization is up to date and give a booster if it has been >5 years.

• Itching is common and should be treated with either systemic antihistamines or topical agents (e.g., moisturizing creams, sodium bicarb solutions) to avoid scratching and an increased risk for secondary infections.
Cancer Assessment in the Nursing Home

Before starting a workup to find any cancer, consider using an online tool to aid in estimating life expectancy in seniors (e.g., www.eprognosis.org). Explicitly discussing what you could find with the patient, family or MDPOA prior to starting may help avoid any workup if the decision would be not to treat regardless of what is found. This information should be spelled out on the MOST form (see Advance Directives on page 1).

- **Weight loss** (see Weight Loss Pearl on page 62): Weight loss is such a nonspecific finding that no shotgun approach should generally be taken without specific signs or symptoms to guide the workup.
- **Rectal bleeding**: once hemorrhoids, anal fissures and brisk upper GI bleeding have been considered and eliminated as likely causes, colon cancer becomes a distinct possibility. See bullet #1, above, before initiating a workup.
- **Pulmonary nodule**: most commonly caused by benign or malignant neoplasms, infections (Tb, bacterial abscess, unusual bacteria or fungi), vascular infarcts or malformations, inflammatory diseases, hematomas or amyloid. The decision about how aggressively to pursue a diagnosis versus "watchful waiting" should again follow the general guidelines in bullet #1, above.
- **Skin cancer**: Primary care providers (PCPs) should do good skin exams on admission and every 1 – 2 years, focusing on sun-exposed areas. When trained, many PCPs can do simple excisions or cryotherapy. More complicated lesions or potential melanomas may require a dermatologic referral when appropriate from a global perspective.
- **Postmenopausal bleeding**: In patients not taking progesterational agents, bleeding should be considered a sign of uterine cancer until proven otherwise. Gynecologic referral should be made for surgical candidates. When more information is requested prior to making a decision, consider a pelvic ultrasound. Empiric treatment with vaginal estrogens will usually help with atrophic vaginitis.
- **Mammograms**: would help clarify the circumstances when a breast nodule is detected in patients where further workup and treatment is appropriate.

Cancer Screening

Assess potential benefits and risks of screening on an individual basis. Consider using an online tool to aid in estimating life expectancy in seniors (e.g., www.eprognosis.org).

- **Prostate specific antigen (PSA)**: The most current recommendation is to discourage PSA testing in men >75. With no discernible benefit seen in decreasing mortality in 14 years after testing (versus no testing), testing PSA in those <75 depends in large part on comorbidities and personal preferences.
- **Mammograms**: Nursing home residents <65 without a reduced life expectancy should continue to receive mammograms every 1 – 2 years. Mammograms should generally be discouraged for those with a life expectancy <4 years.
- **PAP smears**: Cervical cancer screening should be stopped at age 65 for those who have had 2 consecutive negative Pap smears in the previous 10 years with at least one of them in the previous 5 years. There is no evidence that screening after age 75 provides benefit. Patients with comorbidities consistent with a limited life expectancy and those who have had a total hysterectomy should not be screened.
- **Colonoscopy**: Screening should be offered to average-risk individuals 50 – 75 years old. Persons in excellent health aged 75 – 85 should also be screened. Screening should be discouraged after age 85. Colonoscopy or sigmoidoscopy are the invasive screening options recommended most often, though virtual colonoscopy is rapidly gaining support as a viable option and fecal occult blood testing can be used in those unable or unwilling to have colonoscopy.
- **Skin cancer**: There is reason to believe that routine skin exams every 1 – 2 years may decrease mortality in persons with a probable life expectancy of >5 years. Melanoma is the most frequently diagnosed skin cancer that would lead to death and is most prominent in older white males with a history of extensive sun exposure.
Cast/Splint Problems

- If a cast feels too tight or painful under it for the first few days and easily replacing it is not an option, elevate the body part above the level of the heart and apply a cold pack, ice or frozen peas for 20 minutes at a time every couple of hours for 1 - 2 days.
- Mild pain relievers (NSAIDs, acetaminophen) may be useful for the first few days.
- If a splint feels too tight, loosen the bandage, elevate and apply cold pack/ice as above.
- If a cast or splint is damaged, duct (or adhesive) tape and/or ace bandages fix almost anything until a provider can repair or replace it the next day.
- Itching can usually be addressed by using a light dusting of talc powder or a blow dryer set on cool.
- Instruct patients not to stick anything inside the cast to scratch an itch as this may easily lead to an infection that could become severe by the time it is identified. Similarly, do not put lotions, gels or powders on the skin near the cast.
- Keep the area around and near the cast/splint clean.
- When bathing, wrap the cast with a plastic bag and tape it shut, leaving it outside the tub or shower.
- Keep casts and splints dry. If water gets under a cast, dab it and/or use a hair dryer (cool setting to avoid burns) or vacuum cleaner with a hose placed next to the cast to suck wet air out of the cast. If there is a strong suspicion that the area under the cast is still wet, the cast may need to be replaced to prevent skin breakdown.
- Instruct patients to seek medical oversight if:
  - There is unrelenting or severe pain or pain that keeps getting worse
  - The cast cracks, smells bad, is too tight or gets wet and can’t be dried
  - Fingers or toes get cool or cyanotic or they cannot move them
  - They notice sores, redness that is spreading or cuts under the cast
Cellulitis

- An acute infection of the deeper dermis and subcutaneous fat characterized by redness, swelling, tenderness and warmth, usually on an extremity. Although not mandatory for the diagnosis, there will almost always be "streaking" and/or local tender, swollen lymph nodes present.

- CDC criteria for diagnosis require that 1 of the following 2 be present:
  - Pus must be present at a wound, skin or soft tissue site; or
  - New or increasing presence of >3 of the following subcriteria:
    1. Heat at affected site
    2. Redness at affected site
    3. Swelling at affected site
    4. Tenderness or Pain at affected site
    5. Serous drainage at affected site
    6. One constitutional criteria (see Appendix F)

- Cultures of wounds/suspected cellulitis sites must be subcutaneous – not swabs of open wounds. All wounds will grow skin bacteria in high numbers that do not have anything to do with cellulitis.

- The most common pathogens are beta-hemolytic strep and staph.

- Non-antibiotic treatment should include elevating the extremity, treatment of underlying conditions, good hydration efforts and potentially compression stockings.

- Antibiotic choices depend on whether the cellulitis is purulent or nonpurulent.

  - **Purulent** (drainage or exudate without a drainable abscess): Treat for methicillin resistant staph aureus (MRSA) pending good, subcutaneous, leading edge culture results; empiric oral choices (5 - 10 days is normal length; longer for severe infections).
    - Clindamycin
    - Trimethoprim-sulfamethoxazole
    - Tetracycline (doxycycline or minocycline)
    - Linezolid

  - **Nonpurulent**: Treat for beta-hemolytic strep and methicillin sensitive staph aureus (MSSA).
    - Empiric oral choices (5 - 10 days is normal length; longer for severe infections) include:
      - Dicloxacillin 500 mg q 6 hours
      - Cephalexin 500 mg q 6 hours (reduce with moderate CKD or worse)
      - Clindamycin 300 - 450 mg q 6 - 8 hours
Chest Pain

- Although most chest pain is ultimately benign, the potential for a serious etiology should never be overlooked as it may represent an immediate, medical emergency.
- Since thrombolytic therapy may mean the difference between an undamaged heart and a severely damaged one (or a dead patient) and administration is time limited to the first 3 hours after onset of symptoms, patients should be instructed to immediately seek medical advice if/when they have sudden onset of chest pain.
- The correct etiology and workup are best found based on a thorough, detailed history supported by physical findings and simple diagnostic tests, including:
  - Identification of risk factors:
    - **Acute:** Prolonged sedentary condition? What was the patient doing when pain occurred? Recent injuries? Infections? Fever? Chills? New medications (legal or not, over-the-counter [OTC], herbals, homeopathic)? New onset dyspnea or swelling?
    - **Chronic:** diabetes, smoking history, previous cardiovascular disease (MIs, CVAs, TIAs, bypass procedures, PVD, DVT, PE), dyslipidemia, COPD, peptic ulcer disease/GERD, alcohol or drug abuse, edema
  - Nature, severity, rapidity of onset, progression and and location of pain
  - What makes it worse? Better? Ever had it before?
  - Other signs/symptoms (e.g., dyspnea, palpitations, nausea, diaphoresis, splinting or pain with deep breaths, radiation of pain, dizziness, cough, sputum, hemoptysis, headache, edema, loss of function of any body part, abnormal sensations, syncope, lower extremity pain, warmth or erythema, tearing or ripping quality of pain, psychiatric history)?
  - Basic labs: chest xray, EKG, pulse oximetry
  - Other labs based on suspicion: d-dimer, Helical CT or VQ scan, stress test, pulmonary function tests (PFTs), echocardiogram, esophagogastroduodenoscopy (EGD)
- Establish IV access and telemetry early.
- Put patients on oxygen quickly, as soon as oximetry is done (unless oximetry can’t be done immediately).
- Draw blood quickly for cardiac enzymes, CBC, basic metabolic panel, INR.
- Carefully examine thorax, abdomen and extremities.
- Give 325 mg of aspirin and 60 cc of antacid.
- IF EKG is suggestive or there is high suspicion of an acute coronary syndrome and patient’s BP is stable, give a beta blocker, e.g., Inderal 40 mg or metoprolol 100 mg.
- Give sublingual NTG (unless patient has recently taken med for ejaculatory dysfunction).
  - Repeat every 5 minutes for 3 doses if ineffective.
- Give morphine if the NTG is ineffective, 2 - 4 mg initially followed by 2 - 8 mg every 5 - 15 minutes as clinically indicated.
- **Refer to Appendix E** as a protocol to use in LTC and assisted living facilities.
Chronic Obstructive Pulmonary Disease (COPD)

- **COPD is not reversible** once patients quit smoking. Emphasize this *early and often* to smokers to augment efforts to get them to stop as early as possible. Educating family members and others involved in their care is as important as educating the patient.
- Smoking a pack a day for 10 - 20 years is enough to cause clinical emphysema.
- To establish a COPD diagnosis, severity and potential for response to treatment, the history and physical exam should be augmented with:
  - Pulse oximetry at rest and both during and immediately after exercise
  - Spirometry or pulmonary function testing (pre- and post- bronchodilator) in all persons capable of cooperating with the test
- For those who snore or have difficulty sleeping at night, consider testing for sleep apnea.
- Pulmonary rehab exercising may be considered for all patients.
- Prescribe continuous O₂ for anyone with resting hypoxemia (pulse ox <88%).
- Turn the O₂ up when patients are exercising and for 10 minutes afterwards (recovery).
- **Emphysema is primarily** anatomic destruction of alveoli whereas **chronic bronchitis** is the presence of cough and excess sputum for at least 3 months in 2 consecutive years.
- Emphysema patients may not have a reactive component responsive to bronchodilators at baseline, but this may change during viral pulmonary infections when use of inhaled beta agonists may provide more clinical benefit.
- Don’t forget annual influenza vaccinations and document a Pneumovax after age 65. Strongly consider using high-dose Fluzone to increase potential vaccine efficacy.
- Metered dose inhalers will soon be replaced by mist delivery systems. Become familiar with them, as they are not simple to assemble but are easy to use once you do so. Inhalers provide no benefit to those physically or mentally unable to use them correctly (e.g., dementia, repeated inability to demonstrate adequate technique).
- **Long-term treatment with oral steroids is generally not recommended** based on a large body of evidence showing significant side effects and none showing actual benefit in randomized trials. One exception might be in severely demented patients with advanced COPD who are unable to effectively utilize inhaled medications.
- Time-limited steroid bursts during acute exacerbations shortens recovery time while improving hypoxia and lung function and probably reduces risk for early relapse.
- First-line therapy should almost always be a long-acting, inhaled anticholinergic agent, e.g., tiotropium (Spiriva). Short-acting Atrovent can be substituted when there is a significant psychologic/placebo component associated with more frequent inhalations.
- Inhaled beta-2 agonists (e.g., Albuterol) are as effective, but have more adverse effects (e.g., anxiety, arrhythmias, worsening CHF, tachycardia, tremor, insomnia).
- **Avoid the use of both long- and short-acting beta agonists concurrently!**
- **Avoid using both long- and short-acting anticholinergics concurrently!**
- Combining these two should be reserved for more severe disease and assessed regularly to see if the combination is better than a single agent.
- Inhaled steroids should be reserved for **severe** COPD patients with repeated exacerbations, e.g., once FEV₁ is <50% of predicted plus >1 exacerbation/year.
- Cromolyn, leukotriene modifiers and nedocromil have not been shown to be beneficial.
- Antihistamines, benzodiazepines, diuretics, and ephedrine should be used with caution.
Clostridium Difficile Enterocolitis (C. Diff)

- C. diff causes diarrhea 100% of the time until it resolves (i.e., it is not intermittent).
- *If the patient hasn’t been on antibiotics in the past 90 days, they don’t have C. diff* (96% have been on antibiotics in the previous 2 weeks, 100% in the past 90 days).
- Diagnosis is based on having both of the following criteria:
  - 1 of these 2:
    - Diarrhea (3 or more liquid or watery stools in 24 hours above normal for patient) or
    - Presence of toxic megacolon
  - And 1 of these 2:
    - A stool sample yielding a positive lab test result for C. diff toxin or
    - Pseudomembranous colitis identified on endoscopy
- Risk increases for patients with low albumins and on proton pump inhibitors (PPIs). Consider whether PPI use is appropriate and discontinue when possible.
- Do not get follow up stool specimens! If the diarrhea resolves, they are cured. If it does not, they still have C. diff diarrhea. Do not test asymptomatic persons (rates of chronic carriers is very high in this population).
- Other symptoms (in <50%): fever, cramping, abdominal discomfort and/or a high WBC.
- The major complications are dehydration, metabolic abnormalities, intestinal perforation and acute or chronic kidney disease.
- Recurrence rates may be as high as 25% in nursing home residents. Treat the first recurrence with the same agent you initially used. Second or later recurrences should be treated with vancomycin tapered or with a pulsed regimen over 4 - 8 weeks or with Dificid.
- Treatment involves 4 considerations:
  1. Stop the offending antibiotic ASAP.
  2. Use Flagyl 500 mg tid for 10 - 14 days unless the creatinine has increased >1.5X baseline and the WBC is >50,000, in which case oral vancomycin is the treatment of choice (liquid vancomycin is cheaper than pills).
  3. Replace fluids and electrolytes.
  4. *Never use antimotility agents* (e.g., Imodium, Lomotil, opioids, Pepto Bismol)! You may use titrated cholestyramine (e.g., Questran) to control diarrhea if you are using Flagyl. Do not use it with vancomycin (absorbs the vancomycin).
- There is no good evidence that probiotics help, but they don’t hurt and might help.
- Gloves and hand washing for everyone is always a good idea, and soap + water is better than alcohol-based hand cleaners.
- Isolation may be a good idea until symptoms resolve (i.e., no shared toilet).
- Use chlorine or hypochlorite-based cleaning solutions.
Clysis: Subcutaneous Hydration

- Clysis is simply the provision of subcutaneous fluids via catheter through small needles (typically 18 – 22 gauge needles).
- Clysis (or hypodermoclysis) has been used in geriatrics for years, is well accepted and tolerated by patients, and is easier to administer than IV fluids.
- It is ideally suited for patients who are delirious, demented or confused and for those in whom an IV is difficult to establish.
- Starting clysis requires little more than hanging an IV bag, cleaning the skin site (arm, back, leg, abdomen) with an antiseptic wipe, inserting the needle under the skin and affixing it with tape.
- The chief limitation is the rate of infusion, which is typically only 20 - 50 cc/hour. When higher fluid rates are needed, patients can receive clysis at multiple sites simultaneously.
- Complications and risks are minimal. The primary problem is poor resorption, requiring that the needle site be moved.
- Medications should not be administered through the catheter.
Congestive Heart Failure (CHF)

- History, physical exam, pulse oximetry and CXR are usually sufficient to diagnose CHF.
- Lifestyle issues (e.g., tobacco abuse, obesity/diet, inactivity) should be addressed, even in the nursing home population.
- Remember: *not all wheezing is pulmonary!* (Anything narrowing airways → wheezing.)
- While beta agonists (albuterol nebulizers and inhalers) may initially help HF patients who are “wheezing,” this may be due to temporary tachycardia increasing cardiac output that eventually leads to cardiac decompensation and worsening failure. (*Hint:* do not overuse albuterol in patients with established CHF.)
- BNP is seldom helpful diagnostically in elders or those with compromised renal function.
- Echocardiograms should be ordered in patients with a life expectancy of >6 months since appropriately treating systolic failure has clinical benefits in that time frame.
- Pulse oximetry should be done at rest as well as during and immediately after exertion (during recovery phase) in patients who would be willing to wear oxygen if it is abnormal.

**Systolic failure** (impaired contractility → reduced cardiac output/ejection fraction <50%):
- Beta blockers (slowly titrated up) and ACE Inhibitors or ARBs are the treatments of choice. If BP can tolerate it, use both for synergistic benefits.
- Give ACEIs at hs to avoid orthostasis (peak effect is several hours after dosing) and to avoid giving all drugs with BP-lowering effects at the same time in the morning.
- Diuretics should generally be reserved for patients with pulmonary edema or peripheral fluid overload that is symptomatic. If using them solely for peripheral edema, monitor for effect to see if edema recedes in a clinically useful way.
- Aldactone is the only diuretic shown to decrease morbidity/mortality in chronic HF, but this must be weighed against an increased risk of hyperkalemia, especially in those taking >25 mg/d and those on an ACE, ARB, NSAID or K+ supplement.
- Nitrates and hydralazine can be considered in refractory cases.
- There is no role for digoxin unless there is a concomitant tachyarrhythmia that can’t be controlled with a beta blocker or perhaps a calcium channel blocker, especially in older women.

**Diastolic failure** (decreased cardiac output with a normal ejection fraction):
- Find a treatable underlying cause if possible (e.g., valvular heart disease, HTN, hyperthyroid, fibrosis, iron overload, ischemic heart disease, obesity, diabetes), since there is no truly effective pharmacologic option available.
- Beta blockers or calcium channel blockers may occasionally be useful, especially in patients with concomitant atrial fibrillation or tachyarrhythmias.
- Acute ischemia raises left atrial and pulmonary venous pressure, often leading to **cardiac wheezing** with anginal pain, SOB and pulmonary edema. This phenomenon coupled with the increased risk from tachycardia explains why using beta agonist nebs/MDIs may be particularly dangerous when used to treat dyspnea and/or wheezing in patients with diastolic dysfunction.
- Patients are very susceptible to excessive reductions of volume reaching the heart, so diuretics, nitrates, calcium channel blockers, ACE inhibitors and ARBs should be used with caution.
- Digoxin should *not* be used since contractility is intact and beta blockers are a better choice for rate control.
Constipation and Hemorrhoids

Consider immediate transfer to ER if there is associated severe, acute abdominal pain or tenderness and an absence of or high-pitched bowel sounds.

Relevant history to obtain:
- Findings on digital exam
- Recent medication changes (added, deleted, increased use), especially narcotics
- Time and character of most recent bowel movements, including presence of blood
- Normal bowel habits

Constipation: treatment considerations, stepwise
- Increase fluid intake: offer fluids frequently, using whatever patient prefers (other than caffeinated drinks or alcohol that have diuretic effects).
- Increase activity and movement, active is better than passive, but both are effective.
- Add yogurt and/or prunes to the daily diet.
- Add fiber to the diet (takes several weeks to have an effect).
- Have patients schedule bowel movements rather than wait for an urge.
- Laxatives:
  - Bulk forming agents increase frequency and soften stool consistency with few side effects, e.g., psyllium (Metamucil), methylcellulose (CitruCEL), dextran (Benefiber)
  - Osmotic agents increase stool frequency, decrease symptom severity and reduce need for other agents, but may cause significant flatus, e.g. lactulose, PEG, sorbitol
  - Stimulant laxatives enhance colonic transport and motility, improve stool consistency, frequency and ease of passage and are well tolerated, e.g., senna, bisacodyl
- Stool softeners, suppositories and enemas are of limited value clinically, though may be helpful in frail seniors to help with rectal evacuation.

Hemorrhoids: treatment considerations, stepwise
- Use Tucks, aloe or similar wipes (instead of toilet paper.)
- Keep rectal area clean.
- Increase fluid intake, increase fiber in the diet and consider adding a stool softener (to prevent straining during defecation).
- Warm water soaks for 15 - 20 minutes once or twice daily.
- Reassess the continuing need for any medications that may be constipating, especially:
  - Narcotics
  - Cholinesterase inhibitors
  - Iron
- If rectal area is irritated, apply OTC hydrocortisone ointment (e.g., Anusol-HC, Cortaid) or zinc oxide paste or powder.
- If hemorrhoids persist, add an OTC preparation (e.g., Anusol, Nepercainal, Preparation H).
- Especially if there is continued bleeding, consider referral to a proctologist or specialist for consideration of banding of internal hemorrhoids.
Dementia

- History from family and friends is the diagnostic key. Loss of social/work functioning is often the earliest clue to onset with progressive memory impairment later.

- Diagnosis requires a major impairment in learning and memory plus loss of at least one of:
  - Executive function (e.g., calculations, balance checkbook)/handle complex tasks
  - Reasoning ability (inability to cope with new situations)
  - Spatial ability and orientation (getting lost in familiar surroundings)
  - Language (word finding)

- Cognitive abilities interfere with their work performance, social life or relationships.

- Must be a significant decline over previous functioning abilities.

- Insidious in onset and progressive over time (e.g., not just when patient is delirious).

- Potential reversible causes should be evaluated and ruled out as possible causes:
  - Psychiatric disease (e.g., severe depression)
  - B12 deficiency or hypothyroidism
  - Drugs: pain meds, anticholinergics, psychoactive, sedative/hypnotics, alcohol, illicit
  - Syphilis (only in high-risk population)
  - Neuroimaging only for potential reversible causes (metastatic CA, normal pressure hydrocephalus [NPH], subdural)

- Comorbidities, specific deficits and progression characteristics can give etiologic clues:
  - Alzheimer’s (AD): 60-80% of dementia in US; usually older (a genetic variant occurs <60 in +/- 5%); essential feature is memory impairment + above attributes.
  - Lewy body: Visual hallucinations, Parkinsonism, cognitive variability, dysautonomia (orthostasis, arrhythmias, urinary incontinence or retention, constipation, impotence), seizures, sleep problems, and fixed delusions (elaborate, detailed and repetitive).
  - Frontotemporal (aka, Pick’s): Rapid onset in 50s/60s with personality changes, lack of insight and altered social skills or language that progresses to more global dementia; many have extrapyramidal symptoms. Other characteristics include ritualistic behaviors (counting, hoarding, repeating phrases), altered eating habits, decreased emotional abilities, adherence to routines and perseverating.
  - Vascular/multiinfarct: Cardiovascular comorbidities with step-wise loss of mental abilities (sudden decreases noted after which they level off); often seen with AD.
  - Parkinson (PD): Dementia eventually in +/- 40%; primary diagnostic feature is presence of motor features of PD; cognitive deficits worse with anticholinergic drugs; visual hallucinations common; early loss of executive function; memory loss not as bad.

- Educate families early about what to expect and what they can do when it occurs, e.g.:
  - Confusion with new circumstances or places.
  - Eventual appetite and weight loss, likely ways they will deteriorate and die.
  - Consider “dementia” drugs early. Base judgments about response to drugs on reports from patient and family. It is not usually necessary to monitor formal mental status exams outside of research settings.

- After treatment for 3 - 6 months with a particular drug, if there is no improvement, consider changing to another medication. If patient shows no improvement on any medication, discuss the pros and cons of continuing them with the assumption that it is slowing the progression of the dementia (if even only modestly). Weigh perceived benefits against potential side effects such as anorexia, bradycardia, seizures, nausea, headache, diarrhea, insomnia, dizziness and urinary obstruction.

- Get patients and families involved in planning advance directives early in the disease, including discussing feeding tubes (refer to Appendix R), antibiotics, hospitalization, and CPR.

- Use community resources (e.g., Alzheimer’s Association) early and often!
Depression

- Distinguish between exogenous (i.e., recent major change or personal loss causing appropriate sadness) and endogenous (e.g., sad without any particular external reason) depression before starting any medications. Persons generally do not (and should not) respond to antidepressants when there is an obvious, external factor causing it, though these persons may respond to counseling (see below).

- Though depression is common in demented patients, there is growing evidence that use of antidepressants does not improve depressive features any more than placebos.

- In nursing homes, have objective markers for what to consider "successful" before starting antidepressants in demented patients. For example, utilize the Cornell, geriatric depression scale (GDS) or patient health questionnaire (PHQ9) depression scales along with specific staff and family observations of signs and symptoms of depression (e.g., disinterest, thoughts of suicide, weight loss, isolating behaviors) to characterize their situation. Do not hesitate to discontinue the drugs (or go through a trial of adding a second agent) if it is ineffective after 2 - 3 months.

- If two antidepressants are utilized simultaneously, carefully monitor for side effects, including the increased risk of serotonin syndrome.

- For nondemented patients without a major psychiatric diagnosis (e.g., schiz disorders), consider counseling for a short period of time (weeks to several months) in addition to medications. Often the combination of both is more effective than either alone and should be considered.

- For sexually inappropriate behaviors, push an SSRI to higher doses and give it at least 1 - 3 months to work. Note explicitly why it is being used rather than try to concoct signs and symptoms of depression.

- Remeron is a very potent antihistamine, so is best given at bedtime. Most other SSRIs and SNRIs are relatively stimulating, so are best given in the morning or during the day.

- Avoid using any two SSRIs and/or SNRIs together or either class with a tricyclic, Sinemet, Duragesic, lithium or BuSpar, as these combinations increase the risk of serotonin syndrome (see the Pearl on Serotonin Syndrome, page 54) which could easily be missed.

- Always discontinue SSRIs/SNRIs slowly (weeks to months) to avoid withdrawal syndrome.

- With SSRIs, be watchful for common adverse reactions (e.g., nausea, headache, insomnia or somnolence, diarrhea, dry mouth, tremor, dyspepsia, weight gain or loss) and aware of the increased potential for serious reactions (serotonin or withdrawal syndromes, mania, seizures, hyponatremia, SIADH, bleeding, hypoglycemia).

- Tricyclics have been shown to be as effective as SSRIs or SNRIs in seniors. Choice of agent often depends on choosing one with the least risk for harm from likely side effects.
Diabetes

- Type 2 diabetes mellitus (DM2) is characterized by both insulin resistance and eventually a decrease in insulin secretion (early on, insulin production may be normal or increased). Prevalence is drastically increased in obese and/or sedentary persons.
- Prevention of cardiovascular disease (MI, CVA, PVD) and death are more impacted by good blood pressure management than tight control of blood sugars.
- Other than briefly after a new diagnosis of DM2, during rehabilitation stays, or during significant changes of condition, there is no role for sliding scale insulin. Don’t use sliding scales for long term care patients. For short stay patients where you deem that their use at home may pose more risk than benefit, consider using the brief time that you have to educate and perhaps advise a strategy other than SSI at home.
- Most geriatric experts recommend target Hgb A1Cs <8.0-8.5 for LTC patients, balancing DM2 control with excess morbidity/mortality associated with tight control. Some seniors with mild to moderate elevations of glucose (200s or 300s) may have specific or vague symptoms. Others with the same levels may have no symptoms. Targets for blood sugar and A1C depend on symptoms and the patient’s desire for risk reduction.
- Diagnosis of DM may be made by 2 fasting blood sugars >125, a Hgb A1C of >6.5, or a random blood sugar of >200 with symptoms of hyperglycemia.
- Weight loss and exercise can reduce insulin resistance and delay both the onset of the disease and use of medications.
- Hypoglycemia in seniors is as dangerous as hyperglycemia – avoid overtreating.
- Metformin is the best initial treatment. Consider stopping it in those with severe CHF and address its continued use when the GFR is <60 (due to an increased risk of lactic acidosis).
- Short-acting sulfonylureas (e.g., Glipizide) are a good alternative or second choice.
- Insulin:
  - There is virtually no place for regular or NPH insulin due to unpredictable time to onset and duration of action.
  - Insulin regimens should almost always be a combination of a long-acting agent (e.g., Lantus qd or Detemir qd or bid) plus a rapidly-acting insulin (e.g., insulin lispro or aspart) given minutes before each meal. (See Appendix J: Insulin Comparisons and Dosing.)
- If these agents can’t be used or if there’s a need for more treatment, consider other drugs (higher cost, less data and equivocal effectiveness don’t make them good initial choices):
  - Meglitinides (e.g., Repaglinide): compared to sulfonylureas, they have less hypoglycemia, similar efficacy and about the same risk for weight gain
  - Precose (alpha-glucosidase inhibitors): start very slowly and titrate up slowly
  - DPP-IV inhibitors (e.g., Sitaglaptin): modestly effective, expensive and limited data
  - GLP-1 agonists (e.g., Exenatide): injectable drug to be used with other agents for very poorly controlled disease; expensive
  - Thiazolidinediones (e.g., Rosiglitazone, Pioglitazone): include a potential increase of cardiac risk and bladder cancer, respectively, with limited actual benefit in long term studies, but may be the only choice for a select group of patients
- Treatment of lipids with low-dose statins is often advisable (see Dyslipidemia, page 25).
- As the disease progresses, be prepared to realistically discuss secondary complications in the context of their advance directives to help prepare for amputations, dialysis, etc.
- Educate families if “outside snacks” become a significant issue in trying to manage DM2.
- Encourage annual eye exams and routine foot care.
- Monitor renal function and adjust medication dosage as the GFR drops below 60, below 30, etc.
Diarrhea

Note: Norovirus (page 41) and Clostridium Difficile Enterocolitis (page 16) are discussed separately.

- The most serious and impactful problem with diarrhea in seniors is dehydration. Hydration efforts (e.g., oral, IV, clysis [page 17]) are the most important interventions that should constantly be considered and implemented.
- Other complications to monitor and/or prevent diarrhea include:
  - Electrolyte and vitamin deficiencies
  - Delirium (usually secondary to dehydration)
  - Increased risk for falls and fractures (especially hip)
- Seniors make less gastric acid, allowing higher microbial loads to gain access to intestines, increasing susceptibility to gastroenteritis.
- Common causes to consider:
  - Medications (evaluate efficacy vs. potential benefit for every drug); ranked common culprits:
    - Laxatives
    - Cholinesterase inhibitors for dementia (e.g., Aricept, Exelon, Razadyne)
    - NSAIDs, aspirin
    - Diuretics (especially when associated with hypokalemia)
    - Antacids
    - Antibiotics (separate from secondary C. diff)
    - Diabetes drugs (e.g., metformin, Precose)
    - Digoxin
    - Cardiac antiarrhythmics, especially amiodarone
    - Herbal agents, e.g., St. John’s wort, echinacea, feverfew, saw palmetto, ginseng, cranberry, pokerootea, aloe
    - Antidepressants, e.g., SSRIs, SNRIs, trazodone, BuSpar
  - Lactose intolerance – acquired (up to 25% of seniors)
  - Fecal impaction
  - Alcohol abuse
  - Infections/gastroenteritis (most common):
    - Bacterial: E. coli, staph aureus, salmonella
    - Viral: norovirus, adenovirus
    - Parasites or fungal
  - Medical conditions (most common):
    - Irritable bowel (abdominal pain with alternating constipation and diarrhea)
    - Crohns, ulcerative, pseudomembranous or ischemic colitis
    - Gluten enteropathy
    - Pancreatic insufficiency
    - Intestinal surgery/short bowel syndrome
    - Colon, stomach or pancreatic cancer
    - Chronic kidney disease
    - Diverticular disease
- Antidiarrheal agents:
  - Lomotil, Imodium, codeine and bismuth agents (e.g., Pepto Bismol, Kaopectate)
    - Bind gut wall opioid receptors, inhibit peristalsis and increase anal sphincter tone
    - Should not be used for E. coli or C. diff – may cause bowel perforation or extend illness
  - Cholestyramine (e.g., Questran):
    - Bile acid resin that is very constipating, can be titrated up or down for desired effect
    - Often binds other medications the patient is taking, so should not be used chronically
Dizziness

- As a first step, always evaluate the patient’s medications to see if they may be causing or contributing to dizziness. Primary culprits to consider include:
  - ACE inhibitors and other antihypertensives
  - Diuretics
  - Antiarrhythmics
  - Recent use of aminoglycoside antibiotics or cisplatin
  - Alcohol
- Meclizine only treats true vertigo – the sensation that the room or the person is spinning
- Primary etiologies include vestibular, neurologic and cardiovascular causes. The most common etiologies in seniors are:
  - Orthostasis
  - Arrhythmias (especially atrial fibrillation)
  - Benign positional paroxysmal vertigo (BPPV)
  - Migraine
  - Meniere disease
  - Cerebellar infarct
  - Vestibular schwannoma
- Initial workup should include a detailed history (especially including exacerbating causes, symptoms, medications, duration, auditory and other associated symptoms), orthostatic BP measurements, EKG, and focused cardiac and neurologic exams.
- If BPPV is suspected, do a Dix-Hallpike test or ask a therapist to do it (refer to Appendix G). If this test is positive, the diagnosis can be made with some certainty. The patient can be reassured that though it is annoying, it is not life-threatening and will usually go away without any specific treatment over weeks or months, though lasting for several years is not rare. Treatment is usually limited to repeatedly provoking the response in an attempt to have the canalithiasis (calcium particle) migrate in the vestibular canals to a place where it will no longer induce symptoms with the head-turning maneuver.
- Although more extensive workups are often undertaken, they seldom lead to a definitive or treatable cause and are seldom warranted.
Dislipidemia

- Choosing to treat lipid problems in nursing home patients should start with viewing the patient from a global perspective. For those with a limited life expectancy – especially if their likely terminal disease is not cardiovascular (e.g., cancer, MS, cirrhosis, dementia) – lipid agents are more likely to confer undue risk than provide benefit.

- There is almost no reason in a nursing home patient to use both a statin and a fibrate agent (e.g., Lopid, Tricor, others) together since the combination drastically increases the risk for rhabdomyolysis, myopathy and acute renal failure.

- Fish oil may have a beneficial effect on triglycerides, but does not decrease cardiovascular disease or improve outcomes.

- Statins likely provide the majority of their beneficial effects at low to moderate doses that may not be measured by following lipid levels. More intensive statin therapy with CHD patients shows small reductions in cardiovascular events, but has shown no decrease in all-cause mortality.

- Healthy ambulatory seniors with cardiovascular risk factors should be treated in a manner similar to that of middle-aged persons, though the data in older women is much weaker than in older men (i.e., benefits are hard to measure).

- All patients with an LDL-C above their goal should undergo lifestyle modifications (if feasible), primarily diet and exercise.

- Statins are the drug of choice when an agent is used (except for isolated hypertriglyceridemia where a fibrate would be preferred).
Edema

- Edema is very common in the elderly. Successful treatment depends on finding both a treatable condition(s) and a compliant patient.
- Often has a mix of etiologies; some common causes and general considerations include:
  - **DVT**: Acute onset; assymetric, usually tender, risk factors (e.g., underlying malignancy, recent long-bone fracture or surgery, sedentary state); ultrasound is a good first test; begin anticoagulation immediately if positive.
  - **Acute onset of CHF** with both dyspnea and lower extremity is usually related to a cardiac event (e.g., ischemia, arrhythmia, pericarditis, tamponade, valvular disease). EKG, TSH, echo and troponins are all appropriate in workup.
  - **Worsening of chronic HF** is usually noted as increased fluid retention. Although it is often a normal variant related to diet (e.g., increased salty foods), don’t forget to consider other new etiologies when it is significant.
  - **Acute renal failure**: Related to nephrotic syndrome or anything causing a sudden, large decrease in renal blood flow (e.g., acute MI, severe dehydration).
  - **Chronic kidney disease**: Often associated with fluid retention due to decreasing function of kidneys. Diuretics may be critical to management, though overuse may lead to worsening renal function or acute worsening if dehydration ensues.
  - **Hypothyroidism**: If acute, usually seen with altered mental status or coma, dry skin, constipation, lethargy, cold intolerance and weight gain. May be seen in elders with a known diagnosis of hypothyroidism who don’t take prescribed replacement.
  - **Hypoproteinemia**: Due to any etiology (decreased intake, hepatic failure, increased losses as in diarrhea or nephrotic syndrome) leads to decreased osmotic pressure and extravasation of fluid to the interstitial space.
  - **Compartment syndrome**: Unilateral, acute/severe pain, usually related to a fracture, trauma or infection. If edema is new and skin is tense, consider it a medical emergency.
  - **Venous insufficiency**: Veins are “incompetent,” usually due to leaking venous valves; worse after standing and at end of the day, associated with obesity and prior injury (e.g., fracture, DVT). Skin may be reddish-brown due to hemosiderin deposits or have oozing fluid or ulcerations.
  - **Lymphedema**: Often congenital (family history may help make the diagnosis); eventually causes fibrosis, hyperkeratosis, rough skin and nonpitting edema.
  - **Ruptured baker cyst**: Acute onset, unilateral with painful swelling of the calf; often has purplish discoloration along foot as it spreads along the fascial plane.
  - **Due to medications**: Temporal relationship to drug is often apparent, though may be masked by preexisting edema that simply gets worse. Common meds in LTC:
    - Calcium channel blockers
    - NSAIDs
    - Direct vasodilators (e.g., Minoxidil, diazoxide)
    - Neurontin
    - Antidepressants
    - Estrogens
    - Thiazolidinedione hypoglycemics (e.g., pioglitazone, rosiglitazone)
- Confirm the accuracy of degree and distribution of edema when receiving calls before treating too aggressively, e.g., is “4+” edema really 4+?
- For many causes of edema, diuretics may be useful, though compression stockings and/or elevation are often the primary and most effective treatment option. Avoid trying to eliminate all edema with diuretics, accepting that the risks of a small amount (1 - 2+) are almost always less than the risks of overdiuresis (e.g., dehydration, falls, low K+, etc.).
### Elder Abuse and Decisional Capacity

- Neglect or physical abuse of seniors can lead to adverse health outcomes, including depression, cognitive impairment, loss of function or death.
- Abuse may be physical, sexual, psychological, financial, or simply neglect.
- Abuse is behavior by a person with an established relationship and duty to an elder that leads to willful:
  - Infliction of physical pain or injury or unnecessary restraint;
  - Willful nonconsensual sexual contact; or
  - Infliction of emotional harm
- Neglect is the failure to provide for the needs and protection of a vulnerable elder when that person has an ongoing relationship and duty to provide these.
- Abandonment is willful desertion of a vulnerable senior by a caregiver or caretaker.
- Financial exploitation is the nonconsensual appropriation of a senior’s financial resources for the benefit of another.
- Decisional capacity is the ability to:
  - Communicate a choice
  - Understand the relevant information
  - Appreciate the situation and its consequences
  - Reason about treatment options
- All states have legislation to protect elders found to be abused, neglected or financially exploited. Colorado has statutes to provide for protection from self-neglect through Adult Protective Services. Elders in long term care facilities are protected by ombudsman programs. Both serve to protect seniors from mistreatment by nonstrangers.
- If abuse is known or suspected, it must be reported to appropriate officials.

### Essential Tremors

- Essential tremors are not benign when they impact balance, contribute to falls or interfere with eating, drinking or socializing.
- Diagnosis is based on the presence of a bilateral action tremor (no resting tremor) without other neurologic signs. It may include cogwheeling and/or a head tremor. It usually is present for years, has some familial tendencies and shows a beneficial response to alcohol (though routine use is discouraged because of the potential for long-term problems and rebound tremor).
- The tremor is typically more exaggerated the more outstretched the arm and the closer it is to the target (e.g., touching an object, drinking a glass of water).
- Evaluating handwriting samples over time may give strong clues as to its onset.
- Tremors usually get worse with stressful situations.
- Gait is usually normal in contrast to the shuffling gait of Parkinson and wide-based, ataxic gaits in cerebellar disorders.
- Beta blockers are the treatment of choice.
- Primidone is the next best choice, starting at 12.5 mg hs and titrated slowly up over weeks to months until the therapeutic response is realized. Side effects can be limiting, including sedation, fatigue, nausea, vomiting, ataxia, dizziness, vertigo and confusion.
- For severe cases, both agents may be used together.
- Gabapentin or topiramate can be tried when neither of these drugs are effective.
Falls

- Falls are common in the elderly. There are usually multiple underlying causes that all work together to increase risk (50% of elders >65 in LTC fall annually).
- 1-2% of falls in nursing homes lead to hip fractures; 3 - 5% result in other fractures.

Risk Factors

- Balance problems (consider therapy if benefits would be expected to persist)
- Medication issues. Worst offenders:
  - Psychotropic drugs (e.g., antipsychotics, benzos, Depakote, antidepressants)
  - More than 5 routine medications
  - Tranquilizers or sedative/hypnotics, including OTC sleep preparations
  - Antihistamines (e.g., Benadryl, OTC cold/allergy meds, Remeron, Atarax, etc.)
  - Opioid narcotics
  - Dementia medications (e.g., Aricept, Exelon, Razadyne, Namenda)
  - Cardiovascular medications (amiodarone, diuretics, BP meds, antiarrhythmics, digoxin)
  - Steroids
  - Seizure medications
- Overly aggressive treatment of hypertension
- Lower extremity weakness (e.g., thyroid Dz, polymyalgia rheumatica (PMR), obesity, sedentary, post-CVA)
- Memory/cognitive impairments
- Dizziness, dehydration or hypoxia (especially when associated with COPD or CHF)
- Decreased or impaired vision and/or hearing
- Medical conditions:
  - GI: bleeding, diarrhea, postprandial syncope
  - Cardiac: MI, arrhythmia, orthostatic hypotension, CHF
  - GU: micturition syncope, incontinence, nocturia
  - Musculoskeletal: arthritis, deconditioning, post-hospital
  - Neurologic: Parkinson, dementia, CVA/TIA, delirium, neuropathy, seizures, cerebellar disorders, carotid sinus, vertebrobasilar insufficiency, Huntington's
  - Other: diabetes, B12 deficiency, EtOH, multiple myeloma, vasculitis, dehydration
- Miscellaneous: age, female > male, prior history of a fall, alcohol, prior CVA

Environmental Causes

- Slippery floors or patterned carpeting
- Visual impediments (e.g., shiny floors)
- Uneven floors; clutter, pets or objects on floors
- Bad lighting; inaccessible switches esp by stairs
- Electric cords, oxygen tubing
- Lack of or insufficient handrails and grab bars
- Unsafe footwear
- Stairs with lips or too tall
- Ice or water on outdoor walks
- Uneven walks or cracks in walkways
- Excess noise
- Furniture too close to bed or unstable furniture
- Chairs not set to correct sitting position/height
- Restraints
- Hard to reach personal items
- Loose or poorly visible toilet seats (should be a distinctly different color than floor)
Falls (continued)

**Acute Falls**

- Illness (fever, dehydration, arrhythmia) superimposed on other predisposing factors
- Medical change of condition
  - UTIs, pneumonia or other infection
  - Dehydration (diarrhea, heat, nausea, medication-related)
  - Stroke/TIA or heart attack
  - Reaction to new medication (esp orthostasis)
  - Acute depression
  - Hypoxemia with exertion

**Prevention Considerations**

- Meticulously go through the many potential causes and address as many as possible, knowing that most falls are caused by the interplay of a myriad of reasons.
- **Vitamin D3** in doses of at least 2000 IU/day or 50,000 – 100,000 units monthly (given with a large meal with at least some fat) statistically reduces the number of falls in nursing home patients by more than 20% over 2 years. When patients achieve Vitamin D3 levels >45, studies consistently show a reduction from about 1.86 falls per person per year to 1.36. In a population of 100 persons with D3 Levels <40 would be expected to have 186 falls verses only 136 falls in the same 100 persons if their D3 levels were >45. *(See Vitamin D, page 61.)*
- Adding calcium may provide benefit, though how much to add depends on the source. It appears that 500 – 1000 mg/day is as effective as higher doses and is associated with less constipation, cost and nursing time.
- Hip protectors (using the right brand such as FallGard) will significantly reduce hip fractures if worn consistently. Studies show 50-85% reductions in hip fractures when worn by patients most of the time.
- Regular exercise to maintain strength is valuable.
- Employ assistive devices such as walkers, glasses, hearing aids.
- Obtain an environmental review by trained professionals.
- **Medication review:**
  - Make it a point during the annual H&P/review to convince yourself that every medication the patient is taking is really necessary.
  - Write a specific statement of *potential benefits* (and the likelihood of this patient actually receiving that intended benefit in their remaining lifetime) verses the *likely risks* – including falls.
  - Consider the implications of multiple prescribers, including geriatricians vs. FPs, GPs; PCPs vs. specialists
- For more information, the CDC has information on their website at: [http://www.cdc.gov/HomeandRecreationalSafety/Falls/nursing.html](http://www.cdc.gov/HomeandRecreationalSafety/Falls/nursing.html)
Feeding Tube Problems

- For clogged tubes:
  - Connect tip of a large (60 cc) syringe into tube and pull back to remove as much debris as possible. Flush tube with 100-200 cc of warm water (better than other liquids like cola) and repeat pulling back to remove as much debris as possible. As a last resort, try pancreatic enzymes dissolved in baking soda and instill in the PEG for a period of time before flushing with warm water.
  - Dissolve medications in water to deliver in liquid form whenever possible.
  - *Never give cholestyramine or bulking agents through a PEG!*
  - If none of these techniques work and it is a recurrent problem, consider acquiring and using a gastrostomy tube declogging brush.

- The most common minor problems include wound infection, leakage, bleeding, cutaneous or gastric ulceration, pneumoperitoneum, ileus, gastric outlet obstruction and persistent fistulas after removal of the tube.

- If the supplement used is given too fast or is too concentrated, ileus is common. Stop tube feeding for 24 - 36 hours, infuse water and restart at a slower rate.

- Bolus feeding appears to be better both in terms of fewer complications and fewer metabolic problems (more closely imitates real life feeding).

- Do not put larger and larger tubes in to replace leaking tubes; the problem will just get worse. Use local measures for skin breakdown (e.g., zinc oxide or talc-like absorbing agents). With mature tubes that begin leaking, remove the tube for 1 - 2 days to allow the tract to begin closing. Reinsertion of the same tube should solve the problem.

- Tubes should not be routinely replaced. They can be left in place until the tube quits working and mature tubes (in place >30 days) can be safely replaced in the nursing home with minimal education and experience about how to do this.

- Major problems that may occur include necrotizing fasciitis, gastric or esophageal perforation, colocutaneous fistula, buried bumpers and inadvertent removal. For most of these, appropriate preventive measures are effective.

- Tubes inadvertently removed prior to being in for 30 days should be taken back to an endoscopy suite for replacement since the fistula has not had time to mature. Blind replacement carries an unacceptable risk of perforation and/or peritonitis. As noted, once the fistula is mature (about 30 days), they can be safely replaced in the nursing home.

- Flush tubes with 50 - 100 cc of warm water after feeding, medications or supplements.

- To check placement of tube:
  - Turn it off
  - Using a 60 cc syringe, insert it into the tube, instill warm water and then pull back listening and watching for return
  - Alternatively, listen over the gastric area with a stethoscope while infusing air
Gastroesophageal Reflux Disease (GERD)

- GERD is characterized primarily by heartburn due to acid. Secondary symptoms may include cough, triggering asthma, and sore throat (primarily in the morning).
- Diagnosis is clinical and can be affirmed by a trial of proton pump inhibitors (PPI).
- Normal aging includes loss of parietal cells in the stomach that produce acid and intrinsic factor (necessary to absorb B12). Thus, aging normally leads to less acid production and therefore less risk for GERD.
- Since many seniors are given the diagnosis of GERD and started on a PPI routinely in the hospital with no evaluation, strongly consider discontinuing it when they are admitted to a nursing home.
- Chronic PPI use is associated with an increased risk of:
  - Bacterial pneumonia
  - C. diff enteritis
  - Hip fractures
  - Hypomagnesemia
  - B12 deficiency
  - Underabsorption of many medications given concurrently
  - Adverse cardiovascular outcomes after an MI
- Federal regs require discontinuation of PPIs after 4 - 8 weeks unless the patient has:
  - Erosive esophagitis
  - Acid hypersecretion associated with Zollinger-Ellison or neoplastic syndromes
- Try replacing PPIs with routine H2 blockers or antacids. If there are no symptoms within a few weeks, consider switching to prn use only.
- Drugs reducing lower esophageal sphincter pressure (e.g., calcium channel blockers) promote GERD.
- Encourage lifestyle modifications such as weight loss, elevating the head end of the bed, avoid exacerbating factors such as tobacco, caffeine, specific food and do not eat right before lying down.
Hypernatremia

- In LTC, hypernatremia is frequently due to underhydration and responds to replacement of fluids orally, IV or with clysis (see page 17).
- Recognizing that normal aging includes a diminished "thirst" sensation serves as motivation to regularly remind seniors to take in adequate amounts of fluid.
- Preventing dehydration is easier than treating it; actively increase fluids with:
  - Concurrent diarrhea or vomiting
  - Fever from any cause
  - Acute or subacute impaired mental status
  - High blood sugars (>200), whether acute or chronically
  - Seizures or exercise (fluid shift into cells)
  - Decreased mobility or mentation from any cause
  - Hot weather, especially when there is not air conditioning available
  - Increased voluntary intake of any salts (sodium or potassium). Watch for this especially around holidays (e.g., Thanksgiving) or when patients go out on pass and have less dietary oversight.
- Generally "hold" diuretics in patients when any of the above are present.
Hypertension

- Diagnostic testing is seldom necessary unless there are sudden, sustained changes in blood pressure (BP) not easily attributable to an obvious new comorbidity.
- Whenever possible, make it a habit to check BPs with the patient standing. This is particularly important in patients who are falling.
- Measuring BP is important, yet often erroneous. Pitfalls to avoid include:
  - Use the right sized cuff (use a leg cuff for large arms).
  - Make sure the BP machine is fully charged before using it.
  - Compulsively check occasional BPs yourself and compare to staff (or machines) at the same time rather than blindly accepting recorded BPs.
  - In patients with orthostasis, check standing pressures both a.m. and p.m. Check both immediately after standing and after 3 - 4 minutes.
  - Pseudohypertension (falsely elevated BP due to calcified arteries), occurs in 5 - 10% of seniors and routinely leads to overtreatment with multiple drugs. An easy check is to measure an Ankle-Brachial Index; values >1.35 strongly correlate with stiff, calcified arteries (many lab providers can do this doppler, bedside test).
- Target BP is not always as obvious as in younger patients. While undertreating increases risk of cardiovascular disease (e.g., CHD, PVD, CHF, strokes), overtreating can increase falls, fractures, pressure ulcers, side effects and kidney disease.
  - In 60 - 80 year olds, keeping systolic BP <160 reduces CV mortality (dropping it below 150 has not been shown to add further benefit).
  - In persons >80, the evidence is not as clear. Most reviews find that treating to get systolics <160 decreased CV mortality, but does not affect total mortality and is associated with more cost and adverse effects.
  - More aggressive treatment of HTN in diabetics is likely warranted, with at least one major trial finding that it improved outcomes more than treating hyperglycemia.
- Secondary causes of HTN to consider in the elderly include:
  - Sleep apnea
  - Noncompliance with medications
  - Hyperthyroidism
  - Hyporenin hyperaldosteronism (think of it in patients with an unexplained low K+ or those not responding to large doses of ACEIs / ARBs)
  - Vitamin D insufficiency/deficiency (see Vitamin D Pearl on page 61)
  - NSAIDs, steroids, SNRIs, recurrent hypoglycemia, iron, calcium
- Treatment considerations:
  - Consider comorbidities, e.g. use agents for multiple reasons:
    - β Blocker: A fib/tachyarrhythmia, systolic HF, angina, hyperthyroid, tremors
    - ACEI / ARB: systolic HF, diabetes (dc ACEI when GFR <35 to prevent Hi K+)
  - Diet: No added salt, but not a reduced salt diet; moderate alcohol consumption
  - Weight loss: Only in obese patients, exercise in all patients (but especially sedentary ones)
  - Thiazide diuretics: Good outcomes, cheap, may lead to hydration issues
  - Reserpine: Very cheap, highly effective (0.1 – 0.25 mg qd); few side effects
  - ACEIs /ARBs: Good outcomes, can be affordable, don’t use both together
  - Beta blockers: Reasonable outcomes, good choice due to many comorbidities they may help with, often used concomitantly with a thiazide
  - Calcium blockers: Not a good choice due to constipation, edema and increased mortality in CHF patients, but may help with angina or as a second choice for AF
  - Aldosterone: Cheap, good for those with CHF, moderately effective for HTN
  - Nitrates/hydralazine/clonidine/alpha blockers: Seldom used or necessary
Hyponatremia

- Discontinue or decrease diuretics (e.g., thiazides, Lasix, Zaroxolyn).
- Consider fluid restrictions for patients with psychogenic polydipsia.
- Consider mild fluid restriction in some patients for a short period of time to see if they respond quickly.
- Other medications that commonly lead to hyponatremia include:
  - Depakote
  - NSAIDs
  - Carbamazepine
  - Tricyclics
  - SSRIs
  - Thioridazine
  - Clofibrate
  - Cyclophosphamide
  - Nicotine
  - Chlorpropamide
  - Vasopressin

*Try to discontinue these before restricting fluids or adding demeclocycline.*

- Pseudohypnotremia may be seen when the blood sugar is extremely high in diabetics, protein is markedly increased as in multiple myeloma, or triglycerides are extremely high.
- Demeclocycline 600 – 1200 mg may be used for refractory cases.
Incontinence

- “Functional” incontinence due to impaired mobility or decreased mentation (e.g., dementia) is generally not amenable to drug therapy. If an agent is tried, decide in advance on objective criteria for success and discontinue the agent in a reasonable period of time if there is not clinically meaningful improvement.

- Treatment should be directed at reversible causes based on the underlying etiology. Common causes/approaches to lower urinary tract incontinence include:
  - **Urge**
    - Caused by uninhibited bladder contractions (detrusor overactivity)
    - May be improved with incontinence medications
  - **Stress**
    - Leakage occurring when there is an increase in intraabdominal pressure
    - Incontinence agents or pessaries may help
    - In healthier seniors, surgical options may be considered (e.g., slings)
  - **Mixed**
    - Urge + stress incontinence together: treatment options as above
  - **Overflow**
    - Dribbling and/or constant leaking due to incomplete bladder emptying, impaired detrusor contractility and/or bladder outlet obstruction.
    - Most common cause in elderly men and most frequently due to BPH associated with large post void residuals (PVRs). Extended trials of medications for BPH is usually a good place to start, though suprapubic catheters or prostate surgery may eventually be necessary. Incontinence drugs commonly make the problem worse by decreasing involuntary detrusor contractions that may be necessary to overcome obstructive pressure.
    - Detrusor underactivity may also be caused by scarring, peripheral neuropathy, alcoholism, Parkinson, B12 deficiency, spinal injury and diabetes.

- Lifestyle changes such as avoiding alcohol and caffeinated beverages may lead to significant improvement and should be at least tried before moving to drugs or surgery.

- Bladder training (e.g., Kegel exercises) and timed voiding (e.g., every 2 - 4 hours on the clock) may be effective in some patients.

- Most incontinence drugs work for urge, stress and/or mixed incontinence because they are highly anticholinergic, thus causing an increase in these side effects (Appendix K).

- In demented seniors, risks of using these agents often outweigh potential benefits. Since the effects are opposite of the cholinesterase inhibitors, concomitant use of these two classes of agents may reduce the potential benefits of either agent.

- When these agents are used, remember that efficacy increases without increasing the dose for 3 - 4 weeks (avoid increasing the dose too soon) and often lose their efficacy by 4 - 6 months (discontinue them when they are no longer clinically meaningful).

- Treating constipation will often improve incontinence.

- Although persons with UTIs may have transient incontinence, UTIs are not a common cause of incontinence.

- Following PVRs provides valuable information when a bladder doppler is available.

- Consider topical estrogen for women with atrophic vaginitis.
Influenza

- Influenza is a viral upper respiratory infection that causes nearly 50,000 deaths in the United States every year.
- **Vaccination** of all persons over age 6 months is the most effective way to decrease death and morbidity since there is no medication available that kills the virus.
- Influenza season is normally from early January through March. Persons experiencing the abrupt onset of fever and a nonproductive cough during this time period should be considered to have influenza until proven otherwise. If 2 or more cases develop in persons in a nursing home over a short period of time, the diagnosis is established and would not usually require confirmatory testing.
- Rapid swabs or other testing may be considered, but during flu season *should not* interfere with the immediate administration of a neuraminidase inhibitor (Tamiflu or Relenza) in those experiencing typical symptoms.
- Neuraminidase inhibitors should not be stopped in persons with a negative rapid swap *during flu season* since the test is notoriously unreliable for 1 of the 3 major strains.
- Egg allergy is no longer considered a contraindication to vaccination.
- For persons over 65, a high dose vaccine is available that appears to double their chances of building protective immunity.
- The only antivirals to use are the neuraminidase inhibitors (Tamiflu or Relenza), as influenza has acquired almost complete resistance to amantadine and rimantadine.
- When using the neuraminidase inhibitors, treatment must be started within 48 hours, as these agents only diminish the spread of influenza virus to the lungs, they do not kill the virus. Once the virus migrates as far as the lungs, it is too late for them to be effective.
- Prophylaxis of other residents should be considered in LTC facilities when there is an outbreak. Report outbreaks and consult with your local health department for details.

Injuries, Finger and Toe

- Use ice intermittently and elevate the digit for the first 48 hours after the injury. Do not put the ice directly on the skin.
- Remove jewelry as soon as the injury occurs to avoid being unable to remove it after swelling begins when it may be an inadvertent tourniquet. Using soap, lotion, Vaseline, KY Jelly or other lubricant or temporarily coiling thread/string around the digit (sort of like a tight hangman's noose above the jewelry) may aid in removal attempts.
- Immobilize the injured digit by loosely taping it to the next digit. Consider adding a tongue depressor as a sort of splint to provide additional support.
- Acetaminophen or NSAIDs are usually adequate for pain relief.
- If the digit is warm, swollen and/or painful without an obvious injury, elevate and ice for 48 hours, then apply warm soaks or heat 4 times daily for several days. Always closely observe for signs of infection, especially if the nail was involved.
Insomnia

- Understanding the normal physiology of aging in regard to sleep patterns will answer the majority of reasons people want sleeping pills. If a person lives long enough:
  - It will take longer to fall asleep (sleep latency)
  - They will sleep for 4 - 6 hours, then wake and be unable to fall back to sleep
  - After several hours, they are able to sleep for another 1 - 3 hours
  - Decreased REM and deep sleep time
  - Napping for short periods throughout the day becomes more prevalent
- When calculating the average effect on sleep patterns of all agents approved by the FDA for sleep, the average sleeping pill:
  - Decreases sleep latency (time to onset of sleep) by <30 seconds, and
  - Increases the sleep duration by about 7 minutes
- Counsel about good sleep hygiene habits:
  - Avoid stimulants (e.g., tobacco, caffeine, soft drinks) for 2 hours before bedtime
  - Adjust temperature and light to levels conducive to sleep
  - Reduce noise
  - Use the bed/sleeping area only for sleep, not for reading, writing, watching TV, etc.
- Make sure that pain and depression are being adequately addressed.
- Develop care plans for middle of the night activities for patients with normal sleep patterns of aging (e.g., reading, writing letters, folding linens, watching TV).
- Before using sleeping pills for nursing home patients, document hours of sleep residents get for at least 3-4 days.
  - Write an order to record how much sleep the patient gets each hour for the 72 - 96 hours.
  - Make sure to include accurate estimates of naps, sleeping at the table, etc.
  - Tabulate hours of sleep over 24 hours. If they are getting >7 hours sleep over 24 hours, they do not need any pharmacologic aids to sleep.
- By regulation, LTC patients on sedative/hypnotics must undergo dose reductions with an attempt to discontinue every quarter.
- Do not abruptly stop any sleeping medication a patient has been on for an extended period of time. As a general rule, benzodiazepines can be reduced by 10 - 25% per week until they are on a low dose. At that point, every other day for 2 weeks prior to completely discontinuing should be safe. Expect resistance and recurrence of anxiety, agitation or insomnia for the first few weeks, but persevere and work through it.
- Any drug used at bedtime that induces sleep may be considered an inappropriate sedative/hypnotic regardless of the diagnosis attached to it unless there is good, objective documentation that they actually have the problem, the drug is being used at an appropriate dose and frequency, and it is providing benefit.
- REM (dream sleep) is essential to human health. REM sleep can be decreased by:
  - Stimulants
  - Most prescription sedative/hypnotics
  - Benzodiazepines
  - Tricyclic antidepressants
  - Alcohol
  - Medications with potent anticholinergic effects (see Appendix K)
- All sleep medications – prescription, homeopathic, natural, and over-the-counter – are associated with an increase in falls, fractures and other unwanted side effects. Education, recognition, and acceptance of normal changes in sleep patterns with aging, coupled with an increase in physical activity during the day, is the healthiest way to get a good night’s sleep, reduce fatigue, restore alertness and maintain health.
Laboratory Abnormalities, Common

**Low Calcium**
- Always correct for serum albumin before assuming it is low
- Formula: \( \text{[normal albumin} – \text{patient's albumin]} \times 0.8 + \text{measured calcium} \)

**High Calcium**
- Asymptomatic patients
- Check albumin and correct calcium if necessary (see above)
- Stop calcium and Vitamin D supplements
- Patients with seizures, tetany, change in mentation, or who appear dehydrated:
  - IV fluids + loop diuretics
  - Consider glucose + insulin
  - Consider transfer to ER if it complies with advance directives

**Low Sodium**
- Sodium <124 or which drops >10 in a week:
  - Consider transfer to ER if it complies with advance directives
  - Check serum glucose and correct Na+ if glucose is >300
  - Consider immediate use of normal saline infusion
- Sodium 124 – 135, asymptomatic patient:
  - Stop diuretics
  - Review medications for likely culprits
  - Fluid restriction when it is a chronic problem

**High Sodium**
- Sodium >156: begin isotonic saline infusion
- Symptoms present (e.g., hyperthermia, seizures, coma, new delirium): consider transfer to ER if it complies with advance directives
- In diabetics, check serum glucose to see if it is not due to hyperosmolar hyperglycemic state. When present, restore the volume deficit over 24 - 48 hours with infused ½ normal saline, adding glucose when BS drops to <300 (see hyperglycemia, below).
- Stop diuretics

**Hyperglycemia**
- Blood sugar 200 – 600: history and overall condition is mandatory before deciding on a course of action; if it is part of a secondary problem, usually an infection, increase treatment and monitoring while the infection or other problem is being treated.
- Do not be tempted to use sliding scale insulin for a prolonged period of time (i.e., weeks)
- Blood sugar >600
  - Consider transfer to ER if it complies with advance directives
  - If treating in NH, almost always associated with moderate to severe dehydration and/or a hyperosmolar hyperglycemic state. Begin fluids as above. After the first 1 – 2 liters are in, begin insulin at a low to moderate rate, checking glucose frequently until it is below 200 - 300 and staying there. **Do not overtreat** with insulin or begin too early to avoid significant metabolic problems and unintended hypoglycemia. This is primarily a problem resolved with fluid restoration.
Laboratory Abnormalities, Common (continued)

**Hypoglycemia**
- Follow facility protocols when they are in place
- Query any recent changes in diabetic or other medications
- Asymptomatic
  - Orange juice, glucagon or candy as the patient can safely ingest
  - Repeat checking glucose and giving glucose every 15 minutes
  - If patient’s sugar doesn’t respond after several attempts, consider transfer to ER if it complies with advance directives
- Symptomatic
  - Orange juice, glucagon or candy as the patient can safely ingest
  - Consider transfer to ER if it complies with advance directives and sugar does not respond quickly
  - Begin IV or clysis fluids with D5 or D10 (if available)

**Hypokalemia**
- K+ > 2.8, asymptomatic patient
  - Add 20 – 40 meq of additional potassium daily, f/u in 72 hours
  - Consider necessity of continuing diuretics, i.e., *Are they providing clinical benefit?*
- K+ < 2.8, symptomatic patient
  - Consider transfer to ER if it complies with advance directives
  - If not transferred to ER, consider starting an IV with 10 - 40 meq K+ per liter added, running at 100 – 250 cc per hour (depending on comorbidities, e.g., CHF, ascites)
  - Consider necessity of continuing diuretics, i.e., *Are they providing clinical benefit?*

**Hyperkalemia**
- K+ > 6.0, asymptomatic patient, reliably nonhemolyzed specimen
  - Give fluids (IV and/or oral) with a loop diuretic
  - Consider giving insulin and glucose (to drive K+ into cells)
  - Recheck frequently until K+ < 5.5
  - Review medications and renal function
  - Discontinue digoxin, ACEIs and potassium supplements
- K+ > 6.0, symptomatic patient, reliably nonhemolyzed specimen
  - Consider transfer to ER if it complies with advance directives
  - Give fluids (IV and/or oral) with a loop diuretic while waiting for transport

**Anemia**
- “Normal” ranges in seniors have not been credibly established. > 9.5/28 is likely "normal" in many seniors (unless there is an abrupt decrease to this level)
- Since supplemental iron may cause significant medical problems, simply starting it on everyone with a "low" H & H may cause more harm than good
- The combination of a normal or high-normal MCV with a normal RDW argues strongly against iron-deficiency anemia. Check iron levels before starting Fe++.  
- MCVs > 115 are almost always Vitamin B12 or folate deficiency or after urea use
- Microcytic anemias (MCV < 80): iron deficiency, anemia of chronic disease, thalassemia, sideroblastic, sickle cell and hemolysis
- Macrocytic anemias (MCV > 100): B12 or folate deficiency, alcoholism, increased reticulocytes, HIV antiviral treatment, myelodysplastic syndrome, hydroxyurea, estrogen
Lacerations

- When a laceration is identified, the primary goals are:
  - Control of bleeding, usually accomplished with direct pressure on the wound
  - Evaluation for secondary injuries, e.g.:
    - Loss of consciousness?
    - Are pupils equal?
    - Any potential orthopedic damage?
- For wounds needing to be sutured, stapled or glued, if the bleeding is controlled and there are no obvious secondary complications requiring workup in the ER, suturing at any time within 19 hours of the time of the injury (the “golden period”) is acceptable. This may allow for providers to suture the patient at the facility and avoid an unnecessary trip to an emergency room.
- Always clean the wound well and monitor/evaluate for signs and symptoms of infection.
- Use the injury as a reminder to check to see that the patient has received a tetanus booster in the previous 10 years.
- Determine at the time sutures are placed who will remove sutures/staples and when.
- Canvas community providers to find out who can do laceration repairs in facilities, how to reach them, and when they are available (e.g., 24 x 7, weekdays only, daytime only).

Mouth Pain and Sores

- Iced fluids may soothe sores, but will make dental/bone pain worse.
- Rinse mouth with warm water + ½ tsp salt, baking soda qid or with antiseptic mouthwash
  - Generally do not do this for more than 1 week (increases risk for secondary fungal infections)
  - Viscous lidocaine (swish and spit) may be considered for acute, severe mouth pain
- Brush, floss and rinse teeth/mouth at least 3 times daily.
- Use acetaminophen as the primary option for pain; in persons with preserved renal function, NSAIDs may be used for several days.
- Painless lesions (oral cancer, leukoplakia) generally requires a biopsy to provide an accurate diagnosis and plan appropriate treatment options in those patients for whom treatment would be an option.
- Dark spots in persons with light-colored skin may be the first sign of melanoma and should be evaluated if doing so is in line with advance directives.
Norovirus

- Most common cause of nonbacterial gastroenteritis in US: 21,000,000 cases annually.
- Extremely contagious – multiple cases over several hours is very suspicious for either norovirus or food poisoning (if they haven’t eaten the same food in the past 12 hours it is almost certainly noro).
- After a 12 - 48 hour incubation period, there is acute onset of non-bloody, watery diarrhea, often associated with mild fever, abdominal cramping, vomiting and nausea (the variable incubation period means that the first one with symptoms is not necessarily the one who introduced it to the others).
- Diagnosis is based on having both of the following criteria:
  - 1 of these 2: either
    - Diarrhea (3 or more liquid or watery stools in 24 hours above normal for patient) or
    - Vomiting (2 or more episodes in a 24-hour period)
  - A stool specimen for which Norovirus is positively detected
- Symptoms last for 1 - 3 days in otherwise healthy individuals, but up to 4 - 6 days in seniors (1/3 of those infected will be asymptomatic).
- Noro is excreted in feces for weeks after an attack, so do not get follow up stool specimens! If the diarrhea resolves, they are cured, though the immunity to it is local, short-lived and weak, so recurrences a few weeks later are very common.
- It may be transmitted by person-to-person contact, by food handlers, in distributed food (especially raspberries and oysters), or even in well water.
- Keys to limiting spread are:
  - Rigorous hand-washing by everyone
  - Early cohorting and isolation (don’t forget the "invisible" people that roam about like housekeeping, medical & DME providers, therapists, SWs, managers, etc.)
  - Use appropriate disinfectants early and often on all potential surfaces
  - Since 1/3 of infected persons are asymptomatic, assume that everyone in the vicinity is infected. Clean, isolate and cohort broad geographic areas.
  - Use masks, gowns and contact precautions
  - Consider stopping admits to the affected areas and warn visitors, providers
  - Infected staff shouldn’t return to work until 48 hours after symptom resolution
- It is ok to use antimotility agents.
- Treatment is primarily replacing fluids and electrolytes.
- Report it to the health department when you suspect it, armed with what you are doing to reduce spread and monitor for dehydration.
Osteoarthritis

- Osteoarthritis (DJD) is the most common cause of joint pain in seniors, affecting knees > hip > hands > lumbar > cervical spine.
- X-rays will show loss of joint space, osteophytes and/or subchondral sclerosis, though they are seldom necessary to make the diagnosis or implement a treatment plan.
- Rheumatologic studies are rarely useful when arthritis is a new diagnosis in seniors.
- When there is weakness of the proximal muscles of the extremities (i.e., shoulders and hips) along with aching and morning stiffness in these muscle groups and the neck, strongly consider polymyalgia rheumatica (PMR) as an etiology (refer to page 47).
- Imaging studies (e.g., x-ray, CT, MRI) should not be used to monitor effectiveness of treatment or progression of disease unless it is the critical factor in choosing to do a joint replacement or invasive spinal procedure.
- The strongest risk factors are female gender, obesity, age, sedentary lifestyle and hereditary predisposition.
- Treatment options should start with those that present the least risk. Patients should be educated that the goal of pharmacologic treatment is to make arthritic symptoms tolerable, not to make them pain free. In general, a stepwise approach would be:
  - Local analgesia (e.g., capsaicin or methyl salicylate topical applied 3-4 times daily to affected area or diclofenac topical).
  - Routine increase in low impact exercise to the affected joint (prewarn patients that it may increase aching, stiffness or swelling for the first few weeks, but that this will gradually subside and lead to overall improvement over time).
  - Proper use of a cane in the contralateral hand may reduce hip or knee pain and improve function over time.
  - There is no good evidence that glucosamine, chondroitin or acupuncture are of any value and should not be recommended other than taking advantage of the placebo effect.
  - Steroid injections for acute exacerbations of symptoms could be considered, but are a temporary measure at best and, though unusual (<1%), have potential serious risks that should be discussed with patients prior to employing this alternative (e.g., infection, bleeding, hyperglycemia, scarring).
  - Acetaminophen 325 – 500 mg every 4 - 6 hours, not to exceed 4 grams/day (older age and presence of hepatic disease → do not exceed 3 gm/day).
  - NSAIDs may be used if acetaminophen is ineffective, though should be used cautiously in those with chronic kidney disease, HTN, edema and older age. COX-2 inhibitors may offer advantages in those with known GI side effects from NSAIDs, but are no more effective and increase risk for heart disease.
  - Tramadol can be considered, but should always be used with caution in seniors.
  - Opioids are a last resort and should be used at the smallest possible dose for the shortest duration of time possible to avoid addiction and complications.
Osteoporosis

- Unless already being treated, most senior women (and many men) should be screened with some type of bone density measurement. Risk factors include age, female gender, BMI <20, recent significant weight loss, vitamin D deficiency, hormonal treatment of prostate cancer in men or breast cancer in women, steroid use, and smoking.

- DEXA scans are the most accurate for screening or monitoring, though other, simpler measurements may be sufficient in many ALF or LTC patients:
  - Heel ultrasound (QUS): standard parameters are not yet established; may be reasonably predictive for hip fractures for populations, but not individuals yet
  - X-rays: can diagnose osteopenia or fractures, but not osteoporosis
  - Quantitative CT: an expensive alternative to DEXA
  - Biochemical markers: no reliable reference ranges have been established

- FRAX (Fracture Risk Assessment Tool) is a useful tool developed by the World Health Organization utilizing the risk factors (listed above) to measure the 10-year probability of a hip or other major fracture with or without a bone mineral density (BMD) measurement. This simple calculator can be accessed at www.shef.ac.uk/FRAX and is also available as an iTunes app.

- Patients to consider for pharmacologic treatment are only those with a low bone-mass density (a T-score < –2.5) or a history of osteoporotic fractures (e.g., vertebral compression, hip), as the medications used (other than Vitamin D) have not been shown to provide clinical benefits in others and do have associated side effects.

- Most seniors should be treated with Vitamin D (see separate section) since the prevalence of insufficiency + deficiency is probably >90% and treatment is safe.

- Encourage weight bearing exercise, smoking cessation and sunlight exposure.

- A proven brand of hip protectors (e.g., FallGard) should be considered for all seniors in assisted living and long term care facilities as an effective, nonpharmacologic means to prevent fractures.

- Medication reduction and safety measures to prevent falls is an essential component of osteoporosis treatment.

- Pharmacologic treatment options for those shown to have osteoporosis include:
  - Vitamin D: helpful in most seniors.
  - Calcium: 500 – 1500 mg daily for most postmenopausal women is recommended. Adequate Calcium may be obtained through eating 2 small yogurts daily instead of pills (along with potential GI benefits).
  - Bisphosphonates: first line therapy for 5 years for those with known osteoporosis (after which it can be discontinued due to lack of significant additional clinical benefit).
  - Estrogen: should be reserved for only those women at extremely high risk due to its significant negative cardiovascular side effects.
  - Teriparatide: an expensive, daily, injectable third line treatment only for severe disease; leads to increased vertebral and nonvertebral BMD.
    - Teriparatide and other PTH agents should **not** be used with bisphosphonates, as the latter agents impair PTH-induced stimulation of bone.
  - Calcitonin (nasal) is an expensive choice that can only be used for a short period of time with a minimal effect on BMD and fractures, thus is seldom recommended.
  - No combination therapy (excluding Vitamin D and calcium) has yet been shown to improve outcomes, only cost and risk for side effects.
Pain Management

- Pain should be reduced to a level of tolerability that allows the patient to function and have a sense of well-being. The goal is almost never to eliminate all pain. Set realistic goals with the patient, then give them control within well-defined parameters.
- Remember only you, the practitioner, can prescribe medications, so there are limits to the level of control allowable as patients move from pain management to addiction.
- If patients are too demanding, are on extraordinarily high doses or lots of different drugs or you simply don’t feel comfortable prescribing their regimen, consider turning over pain management to either a pain specialist or a palliative care provider.
- Have interdisciplinary team assess often for pain and consider it a possible etiology for insomnia, decreased ambulation, and bad behaviors, especially in demented patients.
- Distinguish between acute and chronic pain, evaluating for probable etiologies:
  - Acute: vascular (e.g., MI, ischemia), injury, obstructive (e.g., bowel, stones)
  - Chronic:
    - Neuropathic (e.g., diabetic, postherpetic, drug-induced)
    - Degenerative or other arthritis
    - Post-CVA
    - Spinal
    - Somatiform, undefined, psychologic including undiagnosed depression
- Whenever possible, attempt nonpharmacologic techniques early and often, such as:
  - Massage
  - Heat, wet, dry or creams or cold
  - TENS or similar
  - Exercise
  - Biofeedback, hypnosis or psychotherapy as appropriate
- Treatment should normally be stepwise from safer to more potent agents.
- Try to distinguish between inflammatory and noninflammatory pain.
  - Inflammatory: NSAIDs, steroids, salsalate
  - Noninflammatory/localized: injections, lidoderm, capsaicin
  - Noninflammatory/widespread:
    - Acetaminophen with gradual increases not to exceed 4 gm/d from all sources
    - Tramadol dosed every 4 - 6 hours, up to 400 mg/day; max 300 mg/day if >75
    - Opioids
      - Try using short-acting, prn only if pain is intermittent
      - Use longer-acting agents for moderate to severe, persistent pain
      - Avoid using multiple opioids except when combining a long-acting agent with periodic, prn use of a shorter-acting agent
      - Start low, go slow!
- Anticipate/expect adverse effects (e.g., bowel management, naloxone, extra fluids).
- Consider adjuvant treatment to improve care:
  - Antidepressants – when overlying depression may be a significant problem.
  - Lyrica or similar agents for neuropathic pain. Be prepared to discontinue if / when no longer effective or large doses of opioids are required.
  - Remember that most muscle relaxants are merely major tranquilizers and often bring as many risks as benefits. Evaluate all drugs for efficacy as you go.
Parkinson Disease

- Resting tremor, bradykinesia, gait instability and rigidity are the major features.
- Marked response to dopaminergic therapy should be considered part of the diagnosis.
- Other characteristics commonly present include:
  - **Asymmetry**: motor deficits are seldom equal bilaterally
  - **Facial**: masked facies, decreased spontaneous eye blink rate, speech problems (e.g., hypophonia, phrase repetition, hypokinetic dysarthria), dysphagia, sialorrhea
  - **Visual**: blurred vision, impaired upward gaze, difficulty opening eyelids
  - **Musculoskeletal**: myoclonus, stooped posture, micrographia (smaller and smaller, circular writing over time), kyphoscoliosis, dystonia
  - **Gait**: shuffling, short steps, retropulsion (fall backwards when they stop), freezing, festination (pick up speed as they go, hard to slow down)
  - **Dementia/cognitive dysfunction**: 40 - 80% eventually
  - **Psychosis**: Especially visual hallucinations; 20 - 40%; often related to medications
  - **Depression, anxiety and mood disorders**: Up to 50%
  - **Sleep disorders**: insomnia (50%), frequent awakening
  - **Autonomic dysfunction**: orthostasis, constipation, diaphoresis, urinary problems
- When symptoms impair the patient functionally and require treatment:
  - **Sinemet**
    - Use the lowest effective dose and maintain it as long as possible
    - Cautiously increase the dose to avoid the serious side effects (hallucinations, confusion, delusions, agitation, psychosis) especially in older patients
    - Common early side effects: nausea, somnolence, dizziness and headache
    - Absence of a clinical response with 1500 mg of levodopa = wrong diagnosis
  - **MAO B inhibitors** (e.g., selegiline)
    - Modestly effective; enhances levodopa’s effect (may increase its side effects)
    - Side effects: nausea, headache, confusion
    - Try not to use it with tricyclics or SSRIs due to potential for serious side effects
  - **Dopamine agonists (DA)** (e.g., bromocriptine, ropinirole)
    - Often used as rescue agents for Sinemet drug holidays or to delay starting it
    - Frequently preferred as the initial agent in younger Parkinson patients (<60)
    - Side effects: similar to Sinement plus edema
  - **COMT inhibitors** (e.g., tolcapone, entacapone)
    - Levodopa extenders that need to be used with a levodopa agent
  - **Anticholinergics**
    - Dopamine depletion leads to cholinergic sensitivity so that cholinergic drugs cause and anticholinergics improve Parkinson symptoms
    - Benzotropine may increase effects of dopamine by inhibiting presynaptic reuptake
    - Best for drug-induced Parkinson or patients with advanced disease and tremor
  - **Amantadine**
    - Mild, short-lived anti-Parkinson activity often reserved for Sinemet drug holidays
- Avoid rapid dc of Sinemet or DA which may lead to a dopamine agonist withdrawal syndrome that resembles cocaine withdrawal (panic, depression, sweating, craving).
Peri-Operative Assessment of Long Term Care (LTC) Patients

- For relatively healthy patients, the overall risk of surgery is low. Most preoperative testing is more likely to lead to false-positive results, extra costs and delays than better outcomes. The exceptions may be preoperative H/H in patients >65 and post-exercise oximetry in patients with COPD or a history of smoking.
- After hip or knee surgery in patients who will be anticoagulated, use a Xa inhibitor instead of low molecular weight heparin or warfarin (see Anticoagulation Issues on page 3).
- Preop CXRs, EKGs, electrolytes, blood sugar, LFTs, coagulation studies and UAs have not been shown to provide any benefits and are not recommended.
- However, some facilities (and/or surgeons and anesthesiologists) may require certain tests.

Pneumonia

See “Respiratory Tract Infections” Pearl on page 50 for diagnostic criteria for Pneumonia.

- When diagnosed, most pneumonias can be easily treated in the nursing home. When advance directives as well as patient's/family's wishes are factored in, potential reasons to consider hospitalization might include:
  - Severe hypoxemia than cannot be overcome in the nursing home
  - Comorbid complications or high risk for same (e.g., MI, PE, pneumothorax)
- In patients at high risk for aspiration, aspiration pneumonitis often imitates pneumonia, including lower lobe infiltrate(s), fever, chest pain and cough. For patients not on a proton pump inhibitor, these are often sterile and will not require antibiotics, as the fever and other symptoms dissipate in 24 – 48 hours.
- **Do not** treat upper respiratory tract infections with antibiotics unless you have clear evidence that there is a bacterial etiology.
- **Do not** treat suspected influenza with antibiotics!
- For patients without severe diarrhea who can swallow, intravenous antibiotics offer no advantages over oral antibiotics and are much more expensive.
- **Antibiotics:**
  - **Aspiration pneumonia**
    - Clindamycin 300 gm po q 6 hours or 600 mg IV q 8 hours **or**
    - Augmentin 875 mg bid **or**
    - Flagyl 500 mg tid + amoxicillin 500 mg tid
    - Others: Levaquin, moxifloxacin, piperacillin/tazobactam
    - Combinations for aerobes and anaerobes may be necessary if patient doesn’t respond to treatment within 72 hours
  - **“Typical” pneumonias**
    - Levoquin 500 – 750 mg qd for 7 - 10 days
    - Augmentin 875/125 bid for 7 - 10 days
    - Ceftriaxone 1 - 2 g IM/IV q 24 hours
    - Cipro 500 - 750 mg po or 400 mg IV q 12 hours
  - **“Atypical” pneumonias, add**
    - Doxycycline 100 mg bid **or**
    - Azithromycin 500 mg on day 1, then 250 mg qd for 4 days
Polymyalgia Rheumatica (PMR)

- Polymyalgia rheumatica (PMR) is an inflammatory rheumatic condition occurring primarily in older persons (average age 70) characterized by weakness of the proximal muscles of the extremities along with aching and morning stiffness (see below).
- It often occurs concomitantly with giant cell (temporal) arteritis. Whether or not to do temporal artery biopsies is controversial, but may be appropriate if a positive biopsy would change the course of treatment.
- Diagnosis should be suspected in persons complaining about activities related to proximal joints (e.g., reaching up high, rising from a chair without use of arms, putting on stockings, walking up stairs).
- Clinical features include:
  - Morning stiffness
  - Joint pain: shoulder > hip/neck pain (worse with movement)
  - Distal extremity synovitis (knees, wrist, MCP joints)
  - Decreased range of motion of hip and shoulder girdles
  - Subjective weakness is worse than objective measurements of strength
  - Nonspecific systemic problems (e.g., malaise, weight loss, anorexia, fever)
  - The previously noted association with temporal arteritis
- Although both are nonspecific, an elevated:
  - Erythrocyte sedimentation rate (ESR) is the easiest test for screening and monitoring treatment (it is one of the few conditions with ESRs >100), but may be normal in a significant percentage of patients
  - Elevated C-reactive protein (CRP) is more common than an elevated ESR
  - If you suspect PMR, test both. If ESR is elevated, use it as a marker for disease activity. If only CRP is elevated, follow it instead – you don’t need to follow both.
- Age >50 + clinical symptoms + elevated ESR/CRP + response to steroids is typically all that is ever necessary to make the diagnosis and monitor successful treatment.
- Patients typically initially require 10 – 20 mg of prednisone daily and most begin responding within 3 days. The higher end dose would be used for larger patients with a higher ESR/CRP and with worse symptoms.
- The prednisone should be increased gradually if there is no clinical response within a week, though almost never does it require doses >30 mg/day. If there is no response in the first month, strongly consider a different diagnosis.
- Most patients require 1 to 2 years of treatment and relapses are common with tapering. A higher initial ESR/CRP, initial doses of prednisone >20 mg/day, tapering too soon or too rapidly seem to be associated with relapses.
- Slow tapering can begin once the patient is symptom-free (or symptoms are tolerable) for about a month, with very gradual dose reductions every 1 - 2 months. ESR and/or CRP can be monitored periodically, though the primary driver of treatment and dose reductions is the clinical response.
- If symptoms recur, the dose can generally be increased to the previous dose with a goal of achieving resolution of symptoms.
Peripheral Vascular Disease (PVD or PAD)

- PVD occurs in about 1 in 5 persons >55 and may have a prevalence closer to 70 - 75% in long term care where half of patients diagnosed are asymptomatic at the time of the diagnosis.

- It is a relatively easy condition to screen for and accurately diagnose with a doppler.

- The gold standard for diagnosis is an Ankle-Brachial Index (Appendix N: PVD Eval with ABI). This is simply the ratio of systolic blood pressures in the arm and leg (ankle), which should normally be about the same. When there is decreased arterial flow in the legs, the ratio decreases. In general, the lower the number – the worse the disease.

- It is more common with aging and prolonged exposure to smoking, HTN and diabetes.

- The ABI can be used to gauge severity of disease. As a rough guide, an ABI of:
  - > 1.3 often correlates with calcified arteries that are noncompressible
  - 0.91 – 1.3 = Normal
  - 0.6 – 0.9 = Mild PVD
  - 0.4 – 0.6 = Moderate PVD
  - < 0.4 = Severe PVD

- Monitoring changes in ABI can be used prognostically when considering invasive interventions and end-of-life decisions.

- Lifestyle modification (e.g., exercise, smoking cessation) and judicious use of medications in the appropriate persons (e.g., statins, drugs for hypertension and/or diabetes, antiplatelet drugs) provide an opportunity to reduce complications.

- PVD is a strong predictor of strokes/heart attacks, even in those without known CHD.

- Smoking is the most important modifiable risk factor. Though stopping does not significantly improve symptoms once they occur, it likely reduces how severe the pain is, the rate at which the disease progresses and is more effective than drug options.

- Exercise (i.e., walking) is helpful in improving the time patients can walk before having pain, especially if it can be safely undertaken for > 20 minutes 3 times weekly.

- Statins taken for >5 years appear to decrease rate of progression of PVD, increase pain-free walk time and decrease major vascular events (e.g., MI, CVA) by about 20%.

- HTN drugs may help slow progression and risk of serious vascular consequences, particularly ACE inhibitors, but have not definitively been shown to improve PVD.

- Anticoagulants are often helpful. Aspirin does not decrease pain symptoms, but delays rate of progression and reduces need for surgical intervention and prevents failure of bypass grafts if surgery is done. 75 - 162 mg qd appears to be as effective as higher doses with fewer side effects. Ticlid, Plavix, Pletal and other antiplatelet agents may be marginally better at achieving these targets, but are more expensive and have worse side effects. Warfarin is not more beneficial and has far more bleeding complications. The thrombin and Xa inhibitors have not been extensively studied or approved for PVD.

- Diabetes control is important. For each 1% increase in Hgb A1C above normal, there is a concomitant increase in PVD symptoms and death of almost 30%.

- Surgery is sometimes an option when the primary problems are in large arteries. A bypass may help if there is not concomitant significant small vessel disease. Not all persons are surgical candidates, as other surgical risks often outweigh the intended benefits and it cannot alter or improve circulation with widespread small vessel disease.
Rashes

- To control itching:
  - Cool bath with baking soda, Aveeno or oatmeal (1 cup/tub) 2 - 3 times daily
  - Cold packs may be applied to localized rashes for 15 minutes 2 - 3 times daily
  - Take measures to prevent scratching (e.g., gloves, long sleeves or pants)
  - For severe itching:
    - Steroid creams 1 - 2 times daily (not on face) for 1 - 2 weeks, after which moisturizing creams used for weeks to a month or more may provide additional benefit
    - Steroid burst may be appropriate for 7 - 10 days
    - Apply aloe, baking soda paste or Aveeno to the affected area
    - Antihistamines may be used for several days in patients not at high risk for falling (potent choices include Benadryl, Atarax, Remeron)
    - Add H2 blockers for complete antihistamine coverage, e.g., Pepcid, Aixd, ranitidine

- For possible allergic reactions:
  - Review new medications (prescription, homeopathic and OTC) for potential causes
  - If there is any neck/throat swelling or wheezing, start a steroid burst for 1 - 2 weeks
    - Go step-by-step q 3 days, prednisone 40 bid ➔ 20 bid ➔ 10 qd ➔ 5 qd ➔ dc
  - For milder reactions, antihistamines may be used for several days in patients not at high risk for falling; potent choices include Benadryl, Atarax, Remeron
  - Add H2 blockers for complete antihistamine coverage, e.g., Pepcid, Aixd, ranitidine
  - Advise to go to ER immediately if any wheezing, stridor/difficult breathing, or hives

- For possible heat rash: see “Sunburn” Pearl
- Fungal/yeast rash: nystatin ointment or powder twice daily until resolved
- Possible shingles (provider visit immediately to evaluate):
  - If lesions are typical vesicles accompanied by pain described as burning or stabbing in a dermatome that doesn’t cross midline, begin treating immediately:
    - Analgesics: NSAID (if appropriate for patient) or Tylenol before adding opioids
    - Acyclovir 800 mg 5 times daily for 7 - 10 days or famciclovir 500 mg q 8 hours x 7 days or valacyclovir 1000 mg q 8 hours x 7 days
- For poison oak, ivy or sumac contact:
  - Wash area thoroughly with warm, soapy water as soon as possible
  - If available, use Tecnu (commercial organic solvent) or Zanfel (mix of ethoxylate and lauroyl sarcosinate) sprays within 2 hours of exposure to remove the allergen
  - Educate patient that itching may continue for 2 - 3 weeks
  - For mild to moderate cases:
    - 1% steroid creams 1 - 2 times daily (not on face) for 1 - 2 weeks
    - Antihistamines as detailed above (nonsedating antihistamines are of limited benefit and generally too weak to provide symptomatic relief)
    - Cold compresses 15 - 20 minutes 3 - 4 times daily
  - For severe cases:
    - Prednisone burst as detailed above
    - Potent topical steroid twice daily for 1 - 3 weeks in addition to the steroid burst
    - Antihistamines as detailed above (nonsedating antihistamines are of limited benefit and generally too weak to provide symptomatic relief)
    - Cold compresses 15 - 20 minutes 3 - 4 times daily
  - Wash all clothes that were exposed to the plants (wear gloves to handle them)
Respiratory Tract Infections (RTIs)

Respiratory tract infections (RTIs) can be categorized into four basic groups:

1. Pharyngitis, upper respiratory tract infection, common cold
2. Influenza-like illness
3. Pneumonia
4. Lower RTI

Criteria for diagnosing these four groups:

1. **Common cold, pharyngitis**—2 of the following are required for diagnosis:
   - Runny nose or sneezing
   - Congestion
   - Sore throat, hoarseness or dysphagia
   - Dry cough
   - Swollen or tender lymph nodes in the neck

2. **Influenza-like illness** *(also refer to the Influenza Pearls on page 36)*
   - Fever and
   - ≥ 3 of the following:
     - Chills
     - New headache or eye pain
     - Myalgias or body aches
     - Malaise or loss of appetite
     - Sore throat
     - New or increased dry cough

3. **Pneumonia**—all 3 criteria required for diagnosis *(also refer to the Pneumonia Pearls, page 46)*:
   - CXR showing pneumonia or new infiltrate (recent pneumonias may take months to disappear from a CXR)
   - One or more of the following respiratory subcriteria:
     - New or increased cough
     - New or increased sputum production
     - Oxygen sats <94% on room air or a reduction of >3% from baseline
     - New or different lung exam abnormalities
     - Pleuritic chest pain
     - Respiratory rate of ≥25
   - One or more of the following constitutional criteria *(also see Appendix F)*:
     - Fever >100°F or repeated temps >99°F or a temp >2°F above normal baseline for patient
     - Leukocytosis: >14,000 neutrophils/mm³ or a left shift with >6% bands
     - Acute change in mental status from baseline with all of the following criteria present:
       - Acute onset
       - Fluctuating course
       - Inattention
       - Either disorganized thinking or altered level of consciousness
     - Acute functional decline
       - New 3-point increase in ADL score *(see Appendix A)*

4. **Lower respiratory tract infection (bronchitis)**—all 3 criteria required for diagnosis:
   - CXR not done or shows no pneumonia or new infiltrate
   - At least 2 of the respiratory subcriteria listed above
   - At least 1 of the constitutional subcriteria listed above
Restless Leg Syndrome (RLS)

- A compulsive urge to move extremities (primarily legs) with associated dysesthesias often described as creeping, crawling, cramping, tingling or achy muscles.
- Symptoms are worst at night and with rest and usually improve with movement.
- Primary RLS: familial (inherited) may emerge at a young age and progresses with age.
- Secondary RLS: associated with iron deficiency, chronic kidney disease, diabetes, obesity and smoking.
- Treatment of 1° RLS is sequential and usually intermittent based on symptom severity.
  - Movement – walk, stretch, flex, massage or mild exercise before resting/going to bed.
  - **In addition to the pharmacologic options below**, try to *stop* agents that make RLS worse, e.g.:
    - Caffeine, nicotine, or alcohol
    - Antidepressants, antihistamines, metaclopramide (Reglan)
- Pharmacologic options
  - Domaminergic agents:
    - Pramipexole (Mirapex) 0.125 mg before usual symptom onset, max 0.5 mg/d
    - Ropinirole (Requip) 0.25 mg before usual symptom onset, max 4 mg/d
    - Sinemet 10/100 or 25/100 at bedtime
  - Opioids (i.e., codeine) or tramadol intermittently as needed for symptoms
    - Stop dopaminergic agents before starting opioids
  - **As a last resort**, benzos or hypnotics at bedtime
    - Stop opioids first
      - *Use only as needed intermittently for uncontrollable symptoms*
  - Daily symptoms that markedly disturb or delay sleep
    - Neurontin, initially once daily, preferably as a single agent
- Refractory symptoms: consider both other etiologies for the problem and referral to a specialist.
Scabies

- Clinically recognized by constellation of symptoms, including itching, red papules, and linear burrows in interdigital web spaces, axilla, groin or rarely on the neck and scalp.
- Risk factors include living in overcrowded conditions, advancing age, sexual contact with multiple partners, immunosuppression, winter season and poor hygiene.
- CDC lists 2 criteria for diagnosis, both of which must be present:
  1. A maculopapular and/or itching rash and
  2. One (1) of the following 3:
     i. Physician diagnosis
     ii. Lab confirmation from scraping or biopsy
     iii. Epidemiologic linkage to a laboratory confirmed case
- Most persons will note exposure to another infested individual. History of close exposure to others should always be taken so that all potentially affected individuals can be treated simultaneously.
- Microscopic visualization of mites, eggs or feces in skin scrapings is confirmatory, though not essential for the diagnosis.
- Treatment is straightforward with either topical permethrin (applied from chin down unless scalp is also affected) or oral ivermectin. All clothing and bedding should be either washed in very hot water (>140°) or placed in a sealed bag for 5 - 7 days
- Norwegian scabies is highly contagious and characterized by erythematous, crusting lesions on torso and extremities with plaques on palms and soles. It is typically treated with both permethrin and oral ivermectin.
- Scabies is usually cured after two treatments, though persons may have residual itching for up to a month after treatment. Patients should be reexamined at one month. If there is recurrence, they should be treated again (using other agents) and educated about the need to treat all other close contacts and keep fastidiously clean clothing and bedding.
- Secondary infections can occur, especially strep or staph.
- Nursing home patients should be isolated until 24 hours after treatment and should have all clothing and bedding laundered as noted above. Personal effects (e.g., books, shoes, pillows) should be placed in a closed bag for 5 - 7 days.
Sensory Impairment

- Efforts to augment sensory impairments in the elderly have been shown to improve function, decrease falls and add to their quality of life.

- Remember to do routine visual screening about every 2 years and replace lost glasses.

- For patients with macular degeneration, advocate for improved lighting as well as magnification and large, bold print for reading materials.

- Cataract extraction is appropriate for many seniors in LTC, especially if there are limited comorbidities and vision is impaired.

- Screen for hearing loss every 2 - 3 years and consider hearing aids and/or pocket talkers for appropriate patients.

- Review Medicare Advantage plans for seniors in LTC in your area to see which provide the best options for providing these services at no (or low) cost.

- Routinely check for cerumen impaction. For those in whom it is a frequent problem, consider routine use of drops to dissolve wax 3 - 4 days per month. A 50:50 mixture of water and hydrogen peroxide is inexpensive and effective. Instill 3 - 5 drops in each ear before bedtime and place cotton in the ears. Remove the cotton in the morning. Repeat for several days each month.

- For those with large amounts of residual wax after the above, the provider should remove wax with an otoscope. This will be met with sincere appreciation by most patients.

- Sense of taste diminishes with age. Consider recommending salt substitute to enhance the flavor of food and perhaps improve nutrition in many seniors.
Serotonin Syndrome

- This is a potentially lethal condition caused by increased serotonin activity in the central nervous system from use of one or more medications that increase this neurotransmitter.
- May present as mild, moderate or severe, usually shortly after change in dose or addition of a serotonergic medication such as:
  - Antidepressants (SSRIs/SNRIs, bupropion, tricyclics, St. John’s Wort, MAO inhibitors)
  - Sinemet
  - Ultram
  - Zofran
  - Dextromethorphan
  - Buspar
  - Fentanyl
  - Lithium
- Diagnosis is the clinical recognition of 3 features:
  1. Neuromuscular excitation (tremor, rigidity, hyperreflexive, ocular clonus)
  2. Autonomic responses (sweating, tachycardia, fever, HTN, diarrhea, vomiting)
  3. Altered mental status (anxiety, restlessness, disorientation, delirium)
- There are no lab tests to confirm the diagnosis, although high WBC, increased CPK, acute renal failure or ARDS may be seen.
- Primary management may include (some or all depending upon severity):
  - Removal of the inciting agent(s)
  - Supportive care
  - Sedation with benzodiazepines
  - Use of a serotonin antagonist such as Cyproheptadine
- Mild to moderate cases usually resolve within 24 hours of removal of the inciting agents.
- Moderate to severe cases (especially those who are febrile) may go downhill quickly and may require paralysis and/or intubation.
- Avoid use of 2 or more agents from the above list (if possible).
- Don’t use an SSRI or SNRI for “depression” and then add Remeron for “appetite stimulation” thinking you can trick physiology.
Skin Tear

- Clean area thoroughly with saline or soap and water.
- For significant lesions, align skin and steri-strip in place.
- Apply antibiotic ointment if area gets red or it is a "dirty" wound.

Sunburn

- First line treatment is to use emollient ointments on the affected area 3 times daily.
- Applying cold compresses or taking a cool bath for 10 - 15 minutes several times daily, as well as use of aloe vera lotions, may aid in symptom relief.
- If age and renal function allow, use of oral or topical NSAIDs routinely for several days will decrease inflammation and pain. Tylenol can be used if NSAIDs cannot be.
- **Do not** apply ice to burns or cool until the area becomes numb.
- As the burn begins to resolve and desquamation begins, routinely apply moisturizing creams several times daily.
- For burns that are widespread, strongly encourage increasing fluid intake for at least a couple of weeks.
- Reconsider use of phototoxic medications, especially sulfas, tetracycline, phenothiazines and thiazides.
- Take the opportunity to educate about the appropriate use of sunscreen. The best agents cover both UVA and UVB radiation, including zinc oxide, avobenzone and ecamsule.
- Use of long-sleeved shirts and wide-brimmed hats should be encouraged.
- Sunburns with widespread blistering may require topical antibiotics as blisters open.
Syncope

- Syncope is an acute, temporary loss of consciousness followed by spontaneous recovery.
- Though usually benign and occurring as a solitary episode (40 - 85% of the time), it is alarming to patients, family, nurses and providers – often leading to extensive testing without a specific causative factor identified much of the time.
- Rigorous testing indicates that roughly:
  - 55 - 60% are vasovagal or reflexive in origin
  - 20 - 25% are cardiac (e.g., tachyarrhythmias, bradycardia, valvular heart disease)
  - Neurologic/psychiatric disease accounts for only 1%
  - Idiopathic, 15 - 40% depending on the study
- History and exam should guide any testing that occurs. Nondirected batteries of tests (e.g., Holter, MRI, PET, CT, tilt-table) are very expensive and have a very low yield, leading to a plausible diagnosis in only about one person in four.
- Syncope that occurs during exercise or exertion should lead to a cardiac evaluation for valvular heart disease or hypertrophic cardiomyopathy (check an echocardiogram). Aortic stenosis can often be treated in a noninvasive manner and treating hypertrophic cardiomyopathy with beta blockers or calcium channel blockers may alleviate symptoms.
- In those without cardiac conditions, consider testing for reflex syncope in patients with recurrent or unexplained syncope, including carotid massage and/or tilt testing. When these are negative, extended-time Holter monitoring may be indicated.
- Hypoglycemia and hypoxia may cause decreased consciousness that imitates syncope, but should be relatively easy to diagnose and manage based on clinical history.
- Medications should always be considered a potential cause, especially any agents that can be temporally related to the syncopal episode(s).
- Implantable cardiac defibrillators (ICDs) or radiofrequency catheter ablation may resolve the issue in some appropriate ventricular arrhythmia patients; ICDs should be considered in patients with prior MIs and ejection fractions <30%.
- Pacemakers may be indicated in selected patients with persistent bradycardia or bi- or trifascicular blocks.
Thyroid: Hyperthyroidism

- TSH is a *more* sensitive and specific test than T4, T3 or a thyroid panel for screening (and less confusing!). One exception would be when TSH-mediated hyperthyroidism is suspected (e.g., TSH secreting tumor).
- A TSH below the lab normal (usually about 0.4) is hyperthyroidism.
  - A low TSH with a normal free T3 & free T4 is almost always subclinical hyperthyroidism, often as a result of toxic multinodular goiter. Findings may be nonspecific and fluctuating, especially in the elderly, and may include:
    - **Cardiac**: atrial fibrillation, periodic tachycardia, increased LV mass
    - **Bone**: decreased bone mineral density
    - **Lab**: decreased total and LDL cholesterol, increased LFTs and CK
    - **Other**: insomnia, mood disorders, intermittent diarrhea, dementia
- Serum T3 is disproportionately higher than T4 in many types of hyperthyroidism. As a result, serum T3 may be valuable for evaluating and following patients. Once steady-state conditions are assured, measuring TSH is required to assess efficacy of therapy.
- If treating hyperthyroidism empirically or intentionally:
  - Methimazole is the drug of choice for treating the thyroid. Start at 5 mg bid and titrate up as needed until thyroid measurements are at goal (allow 4 - 6 weeks between measurements to allow thyroid to reach steady state).
  - Beta blockers can be used to block dangerous or untoward symptoms such as tachycardia, tachyarrhythmias, and anxiety.
  - Steroids can be used to block peripheral conversion of T4 to the more active T3.

Thyroid: Hypothyroidism

- TSH is both *more* sensitive and specific than free T4, free T3 or a thyroid panel (and less confusing!).
- TSH is the only test that should be used for ongoing monitoring of replacement doses (unless it is to suppress TSH secretion to prevent recurrence of thyroid cancer or growth of a goiter).
- Levothyroxin has a half-life of 10-14 days, so can be safely dosed once weekly (give the entire week’s dose on an empty stomach as a single dose).
  - No change in efficacy
  - No peak causing hyperthyroid symptoms due to slowly reaching steady state
  - Decreases cost, number of pills and nursing time
  - Increases compliance (i.e., given as directed on an empty stomach, without meds, food or drink other than water for at least an hour, is easier to do once weekly than every day.)
- Due to a long half-life, it takes 4 - 6 weeks after adjusting dose to reach a new steady state.
- TSH almost always goes up during an acute illness, so *do not check it* until the patient returns to baseline and certainly don’t make dosage adjustments for a TSH drawn at the time of any significant illness.
- In seniors, it is likely that TSH values of 5 - 10 are actually *normal* and do not need to be treated unless the patient is clinically compromised consistent with hypothyroidism.
Transfer to Emergency Room?

- Is transferring the patient in line with the expressed wishes? Review the MOST form.
- What can the ER do that cannot be done in the nursing facility?
- **Know ahead of time who the medical durable power of attorney (MDPOA), guardian, or responsible party is!** Don’t wait for an emergency situation to find out that no one knows who it is or who should be contacted for decisions when the patient can’t make them. *Have a backup contact* whenever possible to avoid “the MDPOA was on vacation…”
- If the patient has a “Do Not Hospitalize,” “Comfort Measures Only” or similar order, consider transfer only if:
  - The patient and/or MDPOA request it
  - The patient has an injury or condition that is not considered to be life threatening and can be treated at an ER, but not in the nursing facility
- Even with “Do Not Hospitalize” or “Comfort Measures Only” orders, actually watching elders go through the dying process is often very difficult for nurses and families. Plan ahead, conceptualize the most likely ways they will die, then prepare the family and staff for what is most likely to expect and let them know there is a plan to deal with it. Reassurance and standing orders often prevent problems dealing with situations like:
  - **Seizures.** These often occur with metastatic cancer, strokes or other conditions that lead to cerebral edema, metabolic abnormalities (e.g., renal or hepatic failure leading to uremia), and medication side effects.
  - **Pain.** Hospice has been doing this forever by using standing orders for Roxanol. Don’t actually write the order until the patient has significant pain, though (reduce medication waste and potential for diversion).
  - **Anxiety.** Low dose benzodiazepines on a prn basis are usually all that are needed. As above, don’t write the order until they need the medication.
  - **Dyspnea.** Breathing patterns change, become labored or sound drastically different as patients die. Prepare everyone for this. Use of low dose benzodiazepines is again an option. If it is related to increasing pulmonary edema, consider using diuretics and morphine (e.g., Roxanol) to take advantage of its pain relief and potent venodilator and anxiolytic properties.
  - **Fractures.** Discuss ahead of time what kind of fracture, if any, would be sent to a hospital for surgical intervention verses conservative management with pain relief, splints, casts, bedrest or other potential options in the nursing facility.
  - **Chest pain.** Cardiac ischemia in the closing moments is not unusual. Be prepared to use nitrates, oxygen, morphine and/or diuretics.
  - **Pulmonary emboli.** Frequently occur as the final event leading to hypoxia, chest pain, cough and a myriad of other symptoms. Would you anticoagulate? Why?
  - **Hypoxia.** Very common as people go through the dying process, but adding oxygen is not always a “comfort measure.” Talk about this ahead of time.
- Review end of life options for appropriate patients on a regular basis, at least annually. *Knowing what everyone wants or expects and what you will do for them as they approach death is as important as any other medical care you provide.*
Transition to Assisted Living or Nursing Home

- Many services can be provided for patients at home, including:
  - Meals (e.g., Meals on Wheels)
  - Maid services/cleaning
  - Nursing assistants for bathing, shaving, and dressing
  - Adaptive devices for mobility, toileting and safety (e.g., grab bars, handles)
- Contact state and/or county social services or social workers in large geriatric practices to explore options for the above.
- Many larger metropolitan areas have Programs of All-Inclusive Care for the Elderly (PACE) that may be another option for caring for persons and providing extended services in their homes to keep them out of assisted living facilities (ALFs) and/or nursing homes longer.
- Patients who cannot transfer themselves will not be able to stay at home safely.
- ALFs can usually provide all of the above services, except:
  - those who are completely unable to transfer
  - patients needing frequent higher-level nursing care

These persons will likely require nursing home placement.

Urinary Catheter/Nephrostomy Tube Problems

- Insure that the tubing and bag are below the pelvis.
- Check and secure all connections and to be sure that stopcocks are open (if present).
- Irrigate the catheter.
- Look for kinks in the tubing.
- If the catheter falls out on its own, check the balloon to make sure it is all there (ie, make sure balloon fragments didn’t break off and stay in the bladder).
- Air or feces in a catheter bag may indicate a bladder fistula.
- Hematuria may be seen due to reinsertion (i.e., instrumentation), stones, significant infections or bladder perforation.

**Do not routinely replace catheters!** Replace only if flow is compromised and attempts to flush tubing are ineffective.

- Routine bladder irrigation is not recommended as it may lead to infection with resistant organisms.
Urinary Tract Infection (UTI)

- **Asymptomatic bacteriuria** is the isolation of bacteria in an appropriately collected urine specimen from someone without signs or symptoms of a UTI.

- Asymptomatic bacteriuria (>100,000 bacteria grown in a urine specimen in a patient without urinary tract infectious signs/symptoms) is common in seniors, especially those in nursing homes and should not be treated with antibiotics. Treating it is the most common infectious disease error made by providers in nursing homes.

- The CDC recently published validated criteria for diagnosing a UTI (see Appendix S). Briefly, to diagnose a UTI, the patient must have urinary signs and/or symptoms documented along with a positive culture.

- Mixed growth on a urine culture is almost always a contaminated specimen.

- The most effective way to avoid UTIs is to increase hydration.

- In men with recurrent UTIs, evaluate the prostate.

- In women with recurrent UTIs:
  - Teach them to double void routinely (urinate -> stand for a few seconds -> urinate again) to more completely empty the bladder.
  - Consider replacement topical estrogen.

- Appearance/odor/color of the urine are not signs of an infection.

- Because of the high concentration of antibiotics in the urinary tract, most UTIs can be effectively treated with a wide range of antibiotics regardless of sensitivities reported from the lab.

- Catheterized patients grow >100,000 bacteria every time checked; don’t equate this with the presence of a UTI (look for systemic signs & symptoms).

- A patient should be sick (not just have an abnormal urinalysis or culture & sensitivity) to justify IV antibiotics or hospitalization.

- Acidification of urine, UTI stat, methenamine, vitamin C and various forms of cranberry have been used for years to try to reduce "recurrent UTIs." While none of them pose particularly significant risks for adverse effects, neither have any of them definitively demonstrated efficacy in preventing recurrent UTIs. If used, track the number of "UTIs" over time; if there is not significant improvement, discontinue them.
Vitamin D Deficiency and Insufficiency

- Vitamin D is a fat-soluble vitamin essential for calcium absorption.
- When checking vitamin D3 levels:
  - <10 = deficiency
  - 10 - 30 = insufficiency
  - >45 = target level in seniors corresponding to decrease in falls and fractures
- Vitamin D deficiency is associated with rickets, but prolonged insufficiency may cause osteomalacia, characterized by "softening" of the bones and muscle pain. Replenishing it leads to stronger bones/muscles, faster reflexes and resolution of many unexplained body aches. Chronic deficiency may cause 2\textsuperscript{o} hyperparathyroidism and osteoporosis.
- Data from NHANES 2004 showed that the mean vitamin D level among all persons >60 was 24 ng/ml, with about 7% showing deficient levels. Estimates of prevalence in LTC patients range from 65% to 95% depending on age, season, latitude and comorbidities.
- Low levels of vitamin D are prevalent in the elderly for many factors, including obesity (fat sequesters vitamin D), liver/biliary tract disease, chronic kidney disease, celiac disease, malabsorption syndromes, inflammatory bowel disease, increased use of sunscreen/sun avoidance, and drugs, (e.g., cholestyramine, seizure medications).
- Clinical conditions linked to low levels of vitamin D include:
  - Falls, fractures and decreased muscle function
  - Low back pain in older women
  - All-cause mortality increase
  - Colon cancer
  - Cardiovascular disease (HTN, diabetes, obesity, high triglycerides)
  - Depression
  - Decreased immunity
- Though an "optimal" dose is still evolving, it appears to be in the range of 2000 – 5000 IU daily. A target D3 level of >45 is the ultimate goal since that is where the primary benefits (primarily decreased falls and fractures) start to be realized. It is reasonable to test a vitamin D3 level 3 - 4 months into treatment to see if higher doses are necessary to reach this desired target. Checking levels 1 - 2 times annually and an occasional serum Ca\textsuperscript{++} may be warranted until further research is completed (levels typically are significantly higher in the summer when there is more sunlight).
- Monthly or weekly dosing of vitamin D3 appears to be as effective as daily dosing (D2 must be given weekly or biweekly). The simplest dosing regimen is to load with 50,000 IU of D3 weekly for 1 - 2 months, then maintain on 50,000 every 2 - 4 weeks.
- Doses as high as 11,000 IU daily have been shown to be safe and without side effects over a period of 6 months.
- Doses of D3 <800 IU daily are ineffective at reducing falls and fractures.
- Take vitamin D supplements with the biggest meal of the day. It is a fat-soluble vitamin that will have better absorption with a bigger meal with some fat.
Weight Loss

• Weight loss, cachexia and protein-calorie malnutrition are common in the elderly, with estimates ranging from 5 to 65%!

• Consider reversible mechanical causes first, e.g., dentition, dysphagia, and aspiration.

• Think of simple things first, i.e., double-checking weights and scales, making sure there isn’t an obvious reason for weight loss (e.g., diuresed edema, amputated limb).

• It is easier and more effective to remove drugs causing weight loss than to add agents that you hope will add weight. **Common drugs in LTC causing weight loss include:**
  - Cholinesterase inhibitors
  - Anticholinergic drugs *(Appendix K)*
  - SSRIs (especially Prozac)
  - SNRIs
  - Stimulants
  - Digoxin
  - Amiodarone
  - Aldactone
  - Iron
  - Potassium
  - Calcium carbonate
  - NSAIDs
  - Aspirin
  - Bisphosphonates
  - Laxatives
  - Bile acid sequestrants
  - PPIs
  - Large thyroid doses

Weight Gain Agents

• **Megace:**
  - In controlled trials in LTC patients, it does not lead to weight gain compared to controls, but it does increase the mortality rate!
  - Blunts beneficial effects of progressive muscle strength training
  - For patients that do increase appetite and gain weight on this drug, it is almost exclusively fatty weight, not lean body mass
  - As a partial steroid agonist, it may lead to adrenal suppression
  - In men, it decreases testosterone, resulting in loss of muscle and has been associated with an increased risk of deep venous thrombosis and perhaps other thrombotic events (e.g., MI, CVA)

• **Mirtazapine (Remeron):**
  - Is an antidepressant and potent antihistamine
  - Leads to weight gain in about 12% of patients taking it for depression; there is no literature suggesting that it leads to weight gain in the absence of depression
  - Adding it to other commonly used antidepressants increases the risk for serotonin syndrome, a potentially life-threatening condition that may easily be missed

• **Marinol:**
  - May lead to weight gain in a small percentage of patients

**FOR BOTH REMERON AND MARINOL**, a reasonable approach may be to:
  - Check weight, albumin and prealbumin before starting
  - Try them for 2 - 3 months while following weights, then recheck protein status
  - If there is not a significant improvement in 2 of the 3 (weight, albumin, prealbumin), taper and discontinue it!

• Good nutritional tools for LTC, especially good at predicting future weight loss:
  - Mini-Nutritional Assessment (available for free on iTunes for smartphones, iPads)
  - Nutrition Screening Initiative from the American Dietetic Association *(see Appendix L)*
  - Simplified Nutritional Appetite Questionnaire (SNAQ) *(see Appendix P)*
Wound Care

- For all wounds on extremities, a thorough evaluation should include:
  - Diabetes status
  - Protein status (albumin and prealbumin)
  - Vascular assessment for peripheral vascular disease (*refer to Appendix N for ABIs*)
  - Other potential risk factors (positioning, immobility, moisture)

- Wounds in patients with significant diabetes and/or vascular disease and/or poor protein status may never heal until or unless the underlying problem can be significantly improved (e.g., diabetes brought under much better control, protein levels increased to roughly an albumin >3.0 and prealbumin >20, vascular bypass surgery or stent for macrovascular disease).

- Zinc only helps if the patient is very deficient. It is easier to give zinc 220 mg qd for 10 days (the time to completely replenish stores) for all wounds than to check levels.

- Multivitamins, minerals and other magic remedies do not help with healing.

- For lower extremity wounds associated with significant edema, elevation of the limb(s) and compression with ACE bandages, JOBST stockings (or similar devices) will be as or more important than local wound care.

- Pressure-relieving mattresses, seating pads, boots and other devices may be of enormous help.

- Engage the services of a good wound care nurse who does not depend on selling the latest high-cost, magic gel to provide wound care.

- Wound vacs may be of benefit for a prescribed period of time (weeks) in higher stage wounds. If significant improvement is not seen in 1 - 3 weeks, strongly consider discontinuing what may be a very expensive, not very useful, time-consuming treatment.

- Androgenic steroids (e.g., oxandrolone) for brief periods (2 - 6 weeks) may be of enormous benefit in patients with difficult wounds associated with very poor protein status (*see Appendix M*).
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<td>P</td>
<td>Simplified Nutritional Appetite Questionnaire (SNAQ) Assessment Tool</td>
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<td>Q</td>
<td>Syncope Clinical History Clues</td>
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<td>R</td>
<td>Tube Feeding in Patients with Dementia</td>
</tr>
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<td>S</td>
<td>Urinary Tract Infections (UTI) Diagnosis in Nursing Home Residents</td>
</tr>
<tr>
<td>T</td>
<td>What a “Do Not Resucitate” Order (DNR) Means</td>
</tr>
</tbody>
</table>
Appendix A: Activities of Daily Living (ADL) Score

Activities of Daily Living (ADL) scores range from zero (0) to twenty-eight (28) based on the following seven (7) ADLs, each scored from 0 (independent) to 4 (total dependence).

<table>
<thead>
<tr>
<th>ADL</th>
<th>Independent</th>
<th>Dependent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bed Mobility</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Transfers</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Locomotion within the Nursing Home</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Dressing</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Toilet Use</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Personal Hygiene</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Eating</td>
<td>0</td>
<td>1</td>
</tr>
</tbody>
</table>

**Total ADL Score (0 - 28): ____**
## Appendix B: Atrial Fibrillation Treatment Comparison

<table>
<thead>
<tr>
<th>Medication</th>
<th>Monthly RX Cost</th>
<th>Estimated Lab Cost</th>
<th>Mechanism of Action</th>
<th>Studies</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Warfarin</td>
<td>$15-$20 per dose*</td>
<td>$40-$100 for each lab</td>
<td>Vitamin K antagonist</td>
<td>Numerous for decades</td>
<td>Lots of drug-drug interactions; frequent INRs; increased liability; easy to confuse dosing.</td>
</tr>
<tr>
<td>Dabigatrin (Pradaxa)</td>
<td>$260</td>
<td>N/A</td>
<td>Direct thrombin inhibitor</td>
<td>RE-LY</td>
<td>Better than warfarin for preventing strokes with a better safety profile (though marginally higher rates of MI, gastritis &amp; dyspepsia). No antidote available.</td>
</tr>
<tr>
<td>Rivaroxaban (Xarelto)**</td>
<td>$260</td>
<td>N/A</td>
<td>Factor Xa inhibitor</td>
<td>Patel, M, et al; Rivaroxaban vs Warfarin in Nonvalvular AF; NEJM 9/8/11</td>
<td>Noninferior to warfarin; no significant difference in risk of major bleeding, though fatal and intracranial bleeding occurred less frequently with Xarelto. Approved for atrial fibrillation @ 20 mg qd. Reduce doses in patients &gt;75, GFR &lt; 40-50 and &lt;60 kg. No antidote available.</td>
</tr>
<tr>
<td>Apixaban (Eliquis)</td>
<td>$260</td>
<td>N/A</td>
<td>Factor Xa inhibitor</td>
<td>ARISTOTLE (NEJM online September 2011)</td>
<td>A RCT with 18,000+ patients. AF patients taking Eliquis had fewer CVAs/embolic events than those taking warfarin and fewer major bleeding events (including fewer hemorrhagic strokes) and were less likely to die during about 2 years of treatment. For every 1,000 patients treated for 1.8 years (in comparison to warfarin), it would prevent 6 strokes, 15 major bleeds, and 8 deaths. No antidote available.</td>
</tr>
</tbody>
</table>

* Cost of drug added each time the dose is changed

** Usual dose is 20 mg/day. Reduce the dose in patients with a low GFR (<40-50 is a reasonable target), over 70-75 years old, and/or under 60kg to 15 mg qd.
Appendix C: Cardiopulmonary Resuscitation (CPR) in Nursing Homes

Should nursing home patients choose to be a “Full COR” - or - “DNR” (Do Not Resuscitate)?
The question may be somewhat misleading, but the answer usually lies in being able to make an informed decision by knowing the facts.

A rapidly growing number of US nursing homes have policies restricting CPR due to dismal outcome statistics for resuscitation efforts in nursing home residents. In one study in a facility with a 24-hour a day on-site team to do CPR, 41 patients underwent CPR. Only 4 survived 60 days or more, of whom 3 were younger, short-term patients who had previously been ambulatory and virtually independent. One fully dependent, bed-ridden patient returned to survive for 100 days, then died after weeks of suffering. Among the four survivors, three cardiac arrests were witnessed, so CPR started within seconds.

**NO unwitnessed arrests resulted in long-term survival.**

Less than 1% of individuals who arrest in a NH survive to discharge from a hospital, and virtually none return to their prior baseline state. Only 1 in 10 patients admitted to a hospital for other reasons who arrest while there survive to discharge. Although almost no nursing home patients survive CPR, all of them can expect to experience extreme pain and discomfort from chest compressions, intubation efforts and attempts to start large intravenous catheters before they do (cracked ribs and sternum, instruments into lungs, cardiac shocks, etc.)

**Chest Compressions:** are the most important element of CPR. When performed at a rate of 100 compressions / minute (pushing the sternum 1.5 to 4 inches into the chest of an average-sized person) and allowing full recoil between strokes, perfusion of the heart and circulation are theoretically maximized. Compressions of this depth almost always crack ribs in frail nursing home patients and often puncture lungs and/or the liver when done correctly. Not pressing deep enough renders the efforts completely useless. Evidence shows that compressions are less effective after a few minutes, mostly due to fatigue and inexperience by the persons doing the CPR.

**Ventilations:** are less important during the initial phase of cardiac arrest when pulmonary vessels and the heart contain some oxygenated blood to meet reduced demands. As pulselessness persists, ventilations become more important, but should not interfere with the cadence and continuity of compressions.

**Bottom Line/Lessons to be Learned:**
1. “DNR” does not mean “do not treat.”
2. In nursing home patients, once breathing and heartbeats stop, there is essentially no chance that doing CPR will successfully revive persons to return them to their baseline status.
3. CPR always causes significant problems, the most obvious of which are extreme pain (often as a result of multiple broken ribs), bleeding, burns and aspiration of blood or stomach contents.
4. Patients choosing not to have CPR still have every possible effort to keep them alive and healthy.
5. As patients approach death, they can choose options such as palliative care or hospice to make the dying process less painful and more dignified while providing counseling/support to families.

**REFERENCES**
2. Gordon, M. Poor outcomes of on-site CPR in a multi-level geriatric facility. 3 1/2 years experience at Baycrest Centre for Geriatric Care. J Am Geriatric Soc 1993; 41:163.
Appendix D: CHADS<sub>2</sub> Risk Score

This table provides an estimate of the risk of stroke, defined as focal neurologic signs or symptoms persisting for more than a day that can’t be explained by bleeding, trauma, peripheral emboli or other reasons. ¹,² TIs are not included.

All differences between warfarin and no warfarin groups were statistically significant except for those with a score of “0” where only a trend was shown.

<table>
<thead>
<tr>
<th>Clinical Parameter</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Congestive Heart Failure (CHF), any history</td>
<td>1</td>
</tr>
<tr>
<td>Hypertension, prior history</td>
<td>1</td>
</tr>
<tr>
<td>Age over 74</td>
<td>1</td>
</tr>
<tr>
<td>Diabetes</td>
<td>1</td>
</tr>
<tr>
<td>Secondary prevention in patients with a prior ischemic stroke or TIA or systemic embolic event</td>
<td>2</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CHADS&lt;sub&gt;2&lt;/sub&gt; Score</th>
<th>Events per 100 person-years</th>
<th>NNT</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Warfarin</td>
<td>No Warfarin</td>
</tr>
<tr>
<td>0</td>
<td>0.25</td>
<td>0.49</td>
</tr>
<tr>
<td>1</td>
<td>0.72</td>
<td>1.52</td>
</tr>
<tr>
<td>2</td>
<td>1.27</td>
<td>2.50</td>
</tr>
<tr>
<td>3</td>
<td>2.20</td>
<td>5.27</td>
</tr>
<tr>
<td>4</td>
<td>2.35</td>
<td>6.02</td>
</tr>
<tr>
<td>5 or 6</td>
<td>4.60</td>
<td>6.88</td>
</tr>
</tbody>
</table>

**NNT** = Number Needed to Treat to prevent one stroke per year with warfarin

¹ Go, AS, Hylek, EM, Chang, Y, et al; JAMA 200; 290:2685
² Gage, BF, Waterman, AD, Shannon, W; JAMA 2001; 285:2664
Appendix E: Chest Pain Protocol for Nursing Homes and Assisted Living Facilities

Although most chest pain is ultimately benign, the potential for a serious etiology should never be overlooked as it may represent an immediate medical emergency.

- Inform the charge nurse and/or DON and call the provider immediately and communicate that it is an emergency.
  - Find and review the patient's MOST form and/or advance directives. Follow the orders in these documents if they have been properly completed and signed.
  - If there is no provider response within 10 minutes, contact the medical director.
  - If there is no medical director response within 5 minutes, contact any other physician who is available or admits patients to the facility.
  - If no provider has called back within 20 minutes from initial onset of pain and it is in compliance with MOST and/or Advance Directives, call 9-1-1.
  - Contact the POA, family, guardian or responsible party immediately after the pain is recognized and keep them apprised of your efforts and plans.

- To help the provider make good decisions when they call back:
  - Have the MOST form and/or advance directives, chart and MAR in hand.
  - Be ready to accurately describe:
    - What was the patient doing when pain occurred?
    - Vital signs?
    - Any new dyspnea or swelling?
    - Nature, severity, rapidity of onset, progression and location of pain
    - What makes it worse? Better? Have they had it before?
    - Other signs/symptoms (e.g., dyspnea, palpitations, nausea, diaphoresis, splinting, pain with deep breaths, radiation of pain, dizziness, cough, sputum, hemoptysis, headache, edema, loss of function of any body part, abnormal sensations, syncope, lower extremity pain, warmth or erythema, tearing or ripping quality of pain, psychiatric history)?
    - Any obvious findings after examination of thorax, abdomen and extremities?

- Be prepared to establish IV access.

- Place patients on oxygen as soon as oximetry is done (or sooner if oximetry is not immediately available).

- Give 325 mg of aspirin and 60 cc of antacid (e.g., Mylanta or Maalox).

- Give sublingual NTG (unless patient has taken medication for ejaculatory dysfunction).
  - Repeat every 5 minutes up to 3 doses if ineffective.
Appendix F: Constitutional Criteria for Infections in LTC

A. Fever
   - Single temp $>100^\circ$ F or
   - Repeated temps $>99^\circ$ F or
   - A temp $>2^\circ$ F above normal baseline for patient

B. Leukocytosis
   - Neutrophilia ($>14,000$ Neutrophils/mm$^3$) or
   - A left shift with $>6\%$ Bands

C. Acute change in mental status from baseline with all of the following criteria present:
   - Acute onset
   - Fluctuating course
   - Inattention
   - Either disorganized thinking or altered level of consciousness

D. Acute functional decline
   - A new 3-point increase in ADL score (see Appendix A)

Appendix G: Dix Hallpike Maneuver for Benign Positional Paroxysmal Vertigo (BPPV)

The patient should be seated on an exam table such that, when lying down, their shoulders reach the end of the table (i.e., the head and neck extend beyond the end of the table).

With the patient sitting up, place both hands on the sides of the face and turn the head to one side. Have the patient lie down quickly with head and neck extended over the end of the table (i.e., neck should be extended beyond horizontal over the end of the table). Observe them in this position for 30 seconds, watching closely for nystagmus. If the patient has BPPV, it will appear with a latency of just a few seconds and will last less than a minute.

When it is done and the patient sits up, the nystagmus will usually recur, though in the opposite direction.

If there is no nystagmus, repeat the entire test with the head turned the opposite direction at the beginning.

If the patient has nystagmus, repeat the test in the same position. Each time the test is repeated, the intensity and duration of the nystagmus should diminish.

Note: Patients often become nauseated with this maneuver and may vomit, so preparation for this possibility is advised.
Appendix H: Drugs Commonly Used in Seniors Associated with Anemia

**Herbal remedies and over-the-counter medications**
- Ginko
- Yohimbe (pausinystalia)
- Black cohosh (actaea racemosa)
- Green tea
- Activin (grape seed)
- Lycopene
- Cranberry (vaccinium macrocarpon)
- Saw palmetto
- Dong quai (angelica)
- Fenugreek (trigonella)
- Capsaicin (capsicum)
- Cat’s claw (uncaria)
- Chromium
- Fish oil

**Any drug that increases risk for GI bleeding**
- Aspirin/NSAIDs
- Antiplatelet drugs
- Warfarin
- Thrombin & factor Xa inhibitors
- Heparin
- Bisphosphonates

**Drugs interfering with folate**
- Alcohol
- Methotrexate
- Barbiturates
- Sulfa drugs (Bactrim, Triamterene, Sulfasalazine, others)
- Dilantin
- Lamotrigine

**Drugs interfering with B12**
- Proton pump inhibitors
- H2 blockers
- Metformin
- Colchicine

**Almost any chemotherapeutic agent**
### Appendix I: Hip and Knee Anticoagulation Comparison Table

<table>
<thead>
<tr>
<th>Medication</th>
<th>Monthly RX Cost</th>
<th>Estimated Lab Cost</th>
<th>Mechanism of Action</th>
<th>Studies</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Warfarin</td>
<td>$15 per dose*</td>
<td>$40-$100 for each lab</td>
<td>Vitamin K antagonist</td>
<td>Numerous for decades</td>
<td>Lots of drug-drug interactions; frequent INRs; increased liability; easy to confuse dosing.</td>
</tr>
<tr>
<td>Rivaroxaban (Xarelto)</td>
<td>$260</td>
<td>N/A</td>
<td>Factor Xa inhibitor</td>
<td>RECORD 1 (NEJM 6/26/08)</td>
<td>An RCT with 4,400 patients comparing Xarelto with enoxaparin for extended thromboprophylaxis after hip surgery. DVT, nonfatal PE or death from any cause occurred in 1.1% and 3.7% respectively (P &lt; 0.001). Proximal DVT, nonfatal PE or death from PE occurred in 0.2% and 2.0%, respectively (P &lt; 0.001). Major bleeding occurred in 0.3% and 0.1%, respectively (P = 0.18).</td>
</tr>
<tr>
<td>Rivaroxaban (Xarelto)</td>
<td>$260</td>
<td>N/A</td>
<td>Factor Xa inhibitor</td>
<td>RECORD 2 (Lancet 6/25/08)</td>
<td>An RCT with 2,509 patients comparing Xarelto with enoxaparin for extended thromboprophylaxis after hip surgery. DVT, nonfatal PE or death from any cause occurred in 2.0% and 9.3% respectively (P &lt; 0.0001). Incidence of any on-treatment bleeding was 6.6% and 5.5%, respectively (P = 0.25).</td>
</tr>
<tr>
<td>Apixaban (Eliquis)</td>
<td>$260</td>
<td>N/A</td>
<td>Factor Xa inhibitor</td>
<td>ADVANCE-3 (NEJM 12/23/2010)</td>
<td>An RCT with 5,407 patients enrolled after hip replacement comparing apixaban with enoxaparin. DVT, PE or death occurred in 1.4% and 3.9%, respectively (P &lt; 0.001). The composite outcome of major and clinically relevant nonmajor bleeding occurred in 4.8% and 5.0% respectively. <strong>Not yet approved in the U.S. for this indication.</strong></td>
</tr>
</tbody>
</table>

* Cost of drug added each time the dose is changed
Appendix J: Insulin Comparisons and Dosing

Pharmacokinetics of commonly used insulin preparations:

<table>
<thead>
<tr>
<th>Insulin Type</th>
<th>Onset of Action</th>
<th>Time to Peak Effect</th>
<th>Duration of Action</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Rapidly-Acting:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lispro, aspart, glulisine</td>
<td>5 to 15 minutes</td>
<td>45 to 75 minutes</td>
<td>2 to 4 hours</td>
</tr>
<tr>
<td><strong>Regular</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>About 30 minutes</td>
<td>2 to 4 hours</td>
<td>5 to 8 hours</td>
</tr>
<tr>
<td><strong>NPH</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>About 2 hours</td>
<td>6 to 10 hours</td>
<td>18 to 28 hours</td>
</tr>
<tr>
<td><strong>Long-Acting:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Insulin glargine</td>
<td>About 2 hours</td>
<td>No peak</td>
<td>20 to &gt;24 hours</td>
</tr>
<tr>
<td>Insulin detemir</td>
<td></td>
<td></td>
<td>6 to 24 hours</td>
</tr>
</tbody>
</table>

Starting insulin in Type 2 diabetics:

1. To simulate normal physiology, 1/2 of daily insulin should be long-acting glargine (e.g., Lantus) and half a rapidly-acting insulin.
2. If the patient has been on a “stable” dose of daily insulin or their average daily needs can be calculated by adding up routine plus recent sliding scale insulin use, start with this for their total daily insulin requirement.
3. If starting from scratch:
   - Get the patient’s weight in **KILOGRAMS**.
   - Divide by 2 to get the initial total daily insulin dose (e.g., a 264 pound person weighs 120 kg, so daily insulin dose would be 60 units).
   - Give half of the daily insulin as **long-acting**. In this example, it would be 30 units of Lantus at bedtime.
   - Give the other half as **rapidly-acting**, splitting it evenly between the 3 meals. Inject it in the interval from 15 minutes before eating to 5 minutes into the meal. If the patient feels ill and is not going to eat, don’t give it. In this example, use 10 units of rapidly-acting just prior to each meal. Use common sense to adjust, e.g., if they eat an average breakfast, nibble at lunch, and a big dinner, split it as 10/5/15 or something similar.
   - Follow blood sugars for 1-3 weeks and make adjustments every 3-5 days following the pattern of half and half long and short. If blood sugars are up throughout the day, increase Lantus. If they trend up consistently only in the afternoon, increase only the midday rapidly-acting, and so forth.
   - Obese, severely insulin resistant patients may require well over 100 units daily. Feel free to go up, but be careful not to regulate too tightly and cause hypoglycemic episodes. Remember that the target A1C in LTC is about 8, but even that may not be attainable in noncompliant patients.
   - Once you are about at a baseline, discontinue routine blood sugars and check only when symptomatic or a couple of times a week.
Appendix K: Medications with Anticholinergic Properties

(Note: there are many other medications with milder anticholinergic properties not listed below.)

**Antihistamines (H-1 blockers)**
- Chlorpheniramine
- Cyproheptadine
- Diphenhydramine
- Hydroxyzine

**Antidepressants**
- Amoxapine
- Amitriptyline
- Clomipramine
- Desipramine
- Doxepin
- Imipramine
- Nortriptyline
- Protriptyline
- Paroxetine

**Antiparkinson Medications**
- Amantadine
- Benztrapine (Cogentin)
- Biperiden
- Trihexyphenidyl

**Muscle Relaxants**
- Cyclobenzaprine
- Dantrolene
- Orphenadrine

**Antivertigo Medications**
- Meclizine
- Scopolamine

**Phenothiazine Antiemetics**
- Prochlorperazine
- Promethazine

**Cardiovascular Medications**
- Furosemide
- Digoxin
- Nifedipine
- Disopyramide

**Gastrointestinal Medications**
- Antidiarrheal Medications
- Diphenoxylate
- Atropine

**Antispasmodic Medications**
- Belladonna
- Clidinium
- Chlordiazepoxide
- Dicyclomine
- Hyoscyamine
- Propantheline

**Antiulcer Medications**
- Cimetidine
- Ranitidine

**Antipsychotic Medications**
- Chlorpromazine
- Clozapine
- Olanzapine
- Thioridazine

**Urinary Incontinence Medications**
- Oxybutynin
- Probantheline
- Solifenacin
- Tolterodine
- Trospium
Appendix L: Nutritional Screening Initiative ("DETERMINE")

Determine Your Nutritional Health

The warning signs of poor nutritional health are often overlooked. Use this checklist to find out if you or someone you know is at nutritional risk.

Read the statements below. Circle the number in the yes column for those that apply to you or someone you know. For each yes answer, score the number in the box. Total your nutritional score.

<table>
<thead>
<tr>
<th>YES</th>
</tr>
</thead>
<tbody>
<tr>
<td>I have an illness or condition that made me change the kind and/or</td>
</tr>
<tr>
<td>amount of food I eat.</td>
</tr>
<tr>
<td>I eat fewer than 2 meals per day.</td>
</tr>
<tr>
<td>I eat few fruits or vegetables or milk products.</td>
</tr>
<tr>
<td>I have 3 or more drinks of beer, liquor, or wine almost every day.</td>
</tr>
<tr>
<td>I have tooth or mouth problems that makes it hard for me to eat.</td>
</tr>
<tr>
<td>I don’t always have enough money to buy the food I need.</td>
</tr>
<tr>
<td>I eat alone most of the time.</td>
</tr>
<tr>
<td>I take 3 or more different prescribed or over-the-counter drugs a</td>
</tr>
<tr>
<td>day.</td>
</tr>
<tr>
<td>Without wanting to, I have lost or gained 10 pounds in the last 6</td>
</tr>
<tr>
<td>months.</td>
</tr>
<tr>
<td>I am not always physically able to shop, cook and/or feed myself.</td>
</tr>
</tbody>
</table>

**Total Score**

Total Your Nutritional Score

<table>
<thead>
<tr>
<th>0 - 2</th>
<th>Good!</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Recheck your nutritional score in 6 months.</td>
</tr>
<tr>
<td>3 - 5</td>
<td><strong>You are at moderate nutritional risk.</strong></td>
</tr>
<tr>
<td></td>
<td>See what can be done to improve your eating habits and lifestyle. Recheck your nutritional score in 3 months.</td>
</tr>
<tr>
<td>&gt;5</td>
<td><strong>You are at high nutritional risk.</strong></td>
</tr>
<tr>
<td></td>
<td>Work with your healthcare professionals to improve your nutritional health.</td>
</tr>
</tbody>
</table>

Remember that warning signs suggest risk, but do not represent diagnosis of any condition. Continue reading to learn more about the warning signs of poor nutritional health.
Appendix L: Nutrition Screening Initiative ("DETERMINE"), Continued

The nutrition checklist is based on the warning signs described below. Use the word DETERMINE to remind you of the warning signs.

**Disease**

Any disease, illness, or chronic condition that causes you to change the way you eat or makes it hard for you to eat puts your nutritional health at risk. 4 of 5 adults have chronic diseases that are affected by diet. Confusion or memory loss that keeps getting worse is estimated to affect 1 out of 5 or more older adults. This can make it hard to remember what, when, or if you've eaten. Feeling sad or depressed, which happens to about 1 in 8 older adults, can cause big changes in appetite, digestion, energy level, weight, and well-being.

**Eating Poorly**

Eating too little or too much both lead to poor health. Eating the same foods day after day or not eating fruit, vegetables, and milk products daily will also cause poor nutritional health. 1 in 5 adults skip meals daily. Only 13% of adults eat the minimum amount of fruit and vegetables needed. 1 in 4 older adults drink too much alcohol. Many health problems become worse if you drink more than 1 or 2 alcoholic beverages per day.

**Tooth Loss Mouth Pain**

A healthy mouth, teeth, and gums are needed to eat. Missing, loose, or rotten teeth or dentures that don't fit well or cause mouth sores make it hard to eat.

**Economic Hardship**

As many as 40% of older Americans have incomes of less than $6000 per year. Having less – or choosing to spend less – than $25-$30 per week for food makes it very hard to get the foods you need to stay healthy.

**Reduced Social Contact**

1/3 of all older people live alone. Being with people daily has a positive effect on morale, well-being, and eating.

**Multiple Medicines**

Many older Americans must take medicines for health problems. Almost ½ take multiple medicines daily. Growing old may change the way we respond to drugs. The more medicines you take, the greater the chance for side effects such as increased or decreased appetite, change in taste, constipation, weakness, drowsiness, diarrhea, nausea, and others. Vitamins or minerals, when taken in large doses, act like drugs and can cause harm.

**Involuntary Weight Loss / Gain**

Losing or gaining a lot of weight when not trying to is an important warning sign that must not be ignored. Being overweight or underweight also increases your chance of poor health.

**Needs Assistance in Self-Care**

Although most older people are able to eat, 1 of 5 has trouble walking, shopping, buying and cooking food, especially as they get older.

**Elder Years Above Age 80**

Most older people lead full and productive lives. But as age increases, risk of frailty and health problems increase.
Appendix M: Oxandrolone for Wounds in Patients with Very Low Protein Status

1. Check a complete metabolic panel (CMP), CBC and prealbumin, making sure to pay close attention to the liver function tests (LFTs) and calcium.

2. Weigh the patient. If the patient already has a problem with peripheral edema, measure the calf circumference about 2” above the malleolus and 2” below the knee joint (for future reference). Weigh every 3 days. If the patient gains water weight too quickly after starting treatment, you should probably discontinue the attempt.

3. Discuss explicitly with the patient and nursing staff what you are going to do, including a formal risk/benefit statement to put in the chart. The potential benefit part is trying to improve protein status in order to help the wound heal. For risks, liver failure is the major one, so this approach should not be tried in anyone with a history of alcohol abuse or prior hepatic problems. Other risks include damage to the spleen, hypercalcemia, edema or CHF exacerbations, increase in hematocrit above normal, acne, increased hair growth, deeper voice, nausea, diarrhea and changes in lipids. Despite all of these, when used for only 4 - 6 weeks as intended, the incidence of any of these is minimal with most of these side effects occurring in persons taking the medication for longer periods of time (i.e., months to years) or those with preexisting liver disease.

4. Once the risk/benefit has been written and discussed, have the patient and/or the responsible party sign it noting that they understand and want the medication used.

5. The following drugs should be minimized, held or avoided during treatment: Tylenol, statins, iron, comfrey tea, kava, niacin, rifampin, methotrexate, warfarin and any other steroids.

6. Start oxandrolone at 5 mg po qd for 2 weeks.

7. After the initial 2 weeks are about up, recheck the complete metabolic panel and CBC, making sure to pay close attention to the LFTs and calcium.

8. Note any improvement in the wound, though this is unlikely at this stage.

9. If there are no red flags (noticeably increasing LFTs or calcium, or marked increase in edema), increase the dose to 5 mg bid for 2 - 4 more weeks.

10. Recheck a CMP and CBC at the end of each week, making sure to pay close attention to the LFTs and calcium. If there are no red flags, continue week by week up to 6 weeks.

11. At the end of therapy, recheck CMP, CBC and prealbumin, making sure to pay close attention to the LFTs and calcium. Discontinue the med after 4 - 6 weeks depending on response (i.e., improving protein status and wound healing) and evidence of side effects.
Appendix N: Peripheral Vascular Disease Evaluation with ABI

Patient Name: ___________________________ DOB: ___________ Date Tested: ___________

<table>
<thead>
<tr>
<th></th>
<th>Left</th>
<th>Right</th>
</tr>
</thead>
<tbody>
<tr>
<td>Leg: dorsalis pedis</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Leg: posterior tibial</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Brachial</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Highest lower extremity systolic _______ / highest brachial systolic _______ = ABI _______

**Diagnosis of Peripheral Vascular Disease**

A number of tests are available to diagnose PVD and its severity, including an ankle-brachial index (ABI). This is an easy way to concurrently affirm both presence and severity of PVD, simply requiring measurement of systolic BPs in the ankle and arm. The highest measurement in the ankles/feet is divided by the higher of the two arm measurements.

**ABI Results:**

- **Normal:** 1.0 to – 1.3 (ankle pressures are normally > arm)
- **>1.30:** suggestive of calcified noncompressible vessels; increased risk of CVD & leg pain
- **<0.9 = PVD** (sensitivity= 0.95; specificity= 1.0) indicating >50% stenosis in major vessels
- **<0.4 = severe ischemic vascular disease**

ABIs that are normal at rest, but decrease by >20% or to <0.9 after exercise, are suggestive of claudication. Testing ABIs after exercise can be accomplished in various ways, e.g., stair climbing or repetitively raising up on toes. Symptomatic patients with lesser changes after exercise should have other etiologies considered to explain their symptoms.

ABIs correlate with higher risk of coronary heart disease, strokes, TIAs, exercise capacity, chronic kidney disease and mortality. Patients with abnormal ABIs are good candidates to screen for other cardiovascular conditions to see if other preventive measures are appropriate. Further testing or referral in patients with positive ABIs would depend upon both severity of disease and consideration of which course of action is appropriate (e.g., medication versus consideration of revascularization) in a particular patient.
Appendix O: Psychoactive/Antipsychotic Medication Consent

This facility recognizes that this is our residents’ home and that they have a right to live in an environment of dignity, comfort and independence. Psychoactive drugs are often used to assist in managing behaviors that may pose a risk to the individual resident or other residents when nonmedical alternatives have not been effective. These drugs should never be used for staff convenience or to sedate residents and only after less dangerous drugs have been tried. The goal for each resident is to provide the least restrictive environment that promotes safety and allows for the maximum possible physical, mental and psychosocial functioning.

The FDA has added a ‘boxed’ warning with safety information regarding use of antipsychotic drugs for behavioral disorders in elderly patients with dementia. The medications named include olanzapine (Zyprexa), aripiprazole (Abilify), risperidone (Risperdal), quetiapine (Seroquel), clozapine (Clozaril), ziprasidone (Geodon), haloperidol (Haldol), thioridazine (Mellaril), chlorpromazine (Thorazine), prochlorperazine (Compazine), loxapine (Loxitane), molindone (Molan), thiothixene (Navane), pimozide (Orap), fluphenazine (Prolixin), trifluoperazine (Stelazine), perphenazine (Trilafon), clozapine (FazaClo), paliperidone (Invega), and olanzapine plus fluoxetine (Symbyax). The warning states:

**Increased Mortality in Elderly Patients with Dementia-Related Psychosis**

Elderly patients with dementia-related psychosis treated with antipsychotic drugs are at an increased risk of death compared to placebo. Analyses of 17 placebo controlled trials (modal duration of 10 weeks) in these patients revealed a risk of death in the drug-treated patients of between 1.6 to 1.7 times that seen in placebo-treated patients. Over the course of a typical 10 week controlled trial, the rate of death in drug-treated patients was about 4.5% compared to a rate of about 2.6% in the placebo group. Although the causes of death were varied, most of the deaths appeared to be either cardiovascular (e.g., heart failure, sudden death) or infectious (e.g., pneumonia) in nature. [THIS DRUG] is not approved for the treatment of patients with Dementia-Related Psychosis.

Usually, intended potential benefits are to calm or decrease fears and protect patients / others from harm resulting as a consequence of adverse behaviors. In addition to an increased risk of death, these drugs often cause incontinence, falls with injuries, sedation, skin breakdown, fatigue, dizziness, nausea, circulatory problems, involuntary muscle movements, diabetes and decreased social contacts (plus many others). “Off label” use may provide help to patients with psychotic behaviors due to dementia, though this must be reevaluated and documented frequently.

A beneficial response would be characterized by ___________ (resident name) is on ___________ (medication name) at a dose of ___________ (prescribed dosage) for the following reason(s): ___________.

A beneficial response would be characterized by ___________ and will be evaluated within ___________ days/weeks. If there is no improvement, the dose will be changed with a reevaluation in the same timeframe or the medication will be deemed ineffective, tapered and discontinued. This process may be repeated multiple times to fully evaluate effectiveness.

**Consent of Physician and Facility Clinical Staff:** We believe the potential benefits of this drug outweigh its likely risks and that it is in the patient’s best interest to take it while tracking psychotic behaviors that place the patient or other residents at risk. We will periodically review efficacy with the facility IDT team to see if it can be discontinued or have its dose reduced.

**Consent of MDPOA, Guardian or Responsible Party:** I have read this consent and had the likely adverse effects and potential benefits of using this drug explained to me. I agree that the possible benefits appear to outweigh the risks and understand that it may not have the intended behavioral changes and the dose may be changed or it may be stopped.

**Nonconsent:** I believe that the potential risks of using this drug outweigh any potential benefits and wish to have it safely discontinued, understanding that if behavioral issues emerge that cannot be safely controlled by other means, the resident may need to have this or a similar medication started or may be required to relocate to another setting or facility.

**This consent should be updated annually.**
Appendix P: Simplified Nutritional Appetite Questionnaire (SNAQ) Assessment Tool

Use this simple screening tool to predict whether the patient is at risk for significant weight loss.

1. My appetite is
   a. very poor
   b. poor
   c. average
   d. good
   e. very good

2. When I eat
   a. I feel full after eating only a few mouthfuls
   b. I feel full after eating about a third of a meal
   c. I feel full after eating over half a meal
   d. I feel full after eating most of the meal
   e. I hardly ever feel full

3. Food tastes
   a. very bad
   b. bad
   c. average
   d. good
   e. very good

4. Normally I eat
   a. less than one meal a day
   b. one meal a day
   c. two meals a day
   d. three meals a day
   e. more than three meals a day

Tally the results based on the following numerical scale: \(a = 1, b = 2, c = 3, d = 4, e = 5\).
The sum of the scores for the individual items constitutes the SNAQ score.

**SNAQ score ≤14 indicates significant risk** of at least 5% weight loss within six months.

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1 Finucane, Thomas E, MD, Christmas, Colleen, MD, Travis, Kathy, MD; JAMA 1999; 282:1365-1370
Appendix Q: Syncope Clinical History Clues

Orthostatic hypotension; syncope occurs:

- Shortly after a positional change against gravity or when standing after exercise
- When standing for a relatively long period of time
- Parkinson patients

Cardiac etiology likely:

- History of structural heart condition
- Changes on EKG, especially
  - Bifascicular block
  - Bradycardia
  - Nonsustained ventricular tachycardia
  - Prolonged or shortened QT; long QRS
  - Q waves
- Occurs during exertion
- Heart pains or feeling of 'skipping a beat' right before the episode
- Family history of sudden cardiac death

Neurologic etiology likely:

- Recurrent without obvious cardiac or other etiology
- Preceded by an aura or prodromal neurologic sensation
- Associated nausea and/or vomiting
- After exertion
- Occurs with rotation of head or with pressure on carotid sinus
- During or immediately after a meal

Appendix R: Tube Feeding in Patients with Dementia

The abstract from an article titled, “Tube Feeding in Patients with Advanced Dementia, A Review of the Evidence,”1 appears below.

To read the complete article, please refer to either:

- the MESA website at www.ColoradoMESA.org (go to “Downloads and Links”) or
- the Journal of the American Medical Association website, www.jama.com

Patients with advanced dementia frequently develop eating difficulties and weight loss. Enteral feeding tubes are often used in this situation, yet benefits and risks of this therapy are unclear. We searched MEDLINE, 1966 through March 1999, to identify data about whether tube feeding in patients with advanced dementia can prevent aspiration pneumonia, prolong survival, reduce the risk of pressure sores or infections, improve function, or provide palliation. We found no published randomized trials that compare tube feeding with oral feeding. We found no data to suggest that tube feeding improves any of these clinically important outcomes and some data to suggest that it does not. Further, risks are substantial. The widespread practice of tube feeding should be carefully reconsidered, and we believe that for severely demented patients the practice should be discouraged on clinical grounds.
Appendix S: Urinary Tract Infection (UTI) Diagnosis in Nursing Home Residents

Noncatheterized patients must satisfy **both** criteria 1 and criteria 2 below to meet UTI criteria:

**Criteria #1**
At least one (1) of the following signs/symptoms:
1. Acute dysuria or pain, swelling or tenderness of testes, epididymis or prostate
2. Fever or leukocytosis + at least one of these localizing criteria:
   i. Acute CVA pain or tenderness
   ii. Suprapubic pain
   iii. Gross hematuria
   iv. New or marked increase in incontinence
   v. New or marked increase in urgency
   vi. New or marked increase in frequency
3. If no fever or leucocytosis, 2 or more from items ii – vi, above, are documented

*IF criteria #1, above, is met and documented, check a UA*

**Criteria #2**
One (1) of the following two microbiologic subcriteria:
1. >100,000 cfu/ml of no more than two (2) species of microorganisms in a voided urine sample
2. >100,000 cfu/ml of any number of organisms in a specimen collected via catheter

Monitor and assess patient’s hydration status to ensure they are consuming **plenty** of extra fluids.

If they meet both criteria, start an appropriate antibiotic.

**Useful information about UTIs:**
- Bacteria in the urine without meeting these criteria is usually asymptomatic bacteriuria and should not be treated
- “Behavior change” or “acting different” is not part of either criteria
- Increasing fluids is almost always a good idea, clearing the bladder of stagnant, microorganism-rich urine
- Consider double-voiding or topical estrogens for elderly women
- Overuse of antibiotics leads to resistant organisms, unnecessary and potentially dangerous side effects, added cost, adverse drug-drug interactions and increasing prevalence of C Diff Enteritis (diarrhea)
Appendix T: What a Do Not Resuscitate Order (DNR) Means

**What we will do:**
- We will keep you clean and dry
- We will provide pain control and symptom management
- We will support your decisions regarding your body
- We will offer you food and water, but will not force it on you
- We will provide support to your loved ones
- We will hold your hand
- We will give you a cool washcloth
- We will read to you if you desire
- We will play music for you
- We will provide adequate pain control if and when you experience pain

**What we can do:**
- We can draw blood and check labs – if you like
- We can provide you with antibiotics
- We can provide artificial nutrition and hydration for a limited period of time
- We can provide IVs if/when needed

**What we will not do:**
- We will not call 911
- We will not put tubes in your throat to breathe for you
- We will not make attempts to restart a heart that has stopped, i.e., we will not...
  - Shock you over and over
  - Inject chemicals into you
  - Get on top of you to push your sternum into your chest and squeeze your heart against your backbone