3-2-1 DB Pharmacology

**---Three new things I have learned regarding a specific drug or class this week.**

1. I have learned so much about the MOA with so many drugs already. However, I was really shocked putting 2 and 2 together about the beta blocker eye drops and how oral beta blockers should be avoided due to bradycardia. I see the reason and understand it, but never really thought about it from a provider’s point of view before.

2. I learned that not only should you avoid decongestant use for hypertensive patients, you also watch elderly patients using diphenhydramine for allergies or sleep. I knew diphenhydramine could have an effect on mental status in the elderly, and even increase risks for falls. But I did not know that it can cause urinary retention.

3. I learned that 1st generation antihistamines cross the blood brain barrier and 2nd generation antihistamines (such as Claritin) do not. Making them much safer for use.

**---Two things you will change about how you prescribe and/or use the drug or how you will educate patients about the drug.**

1. I will definitely watch and monitor my patient’s for serotonin syndrome. This is a very scary diagnosis that I had never heard of before. So many patients use combination drug therapy and are at risk for this syndrome.

2. I will pay close attention to my patient’s list of medications and be aware of any potential drug-interactions.

**---One question I still have about this week’s topic.**

Serotonin Syndrome is a syndrome that occurs when you take medications that cause high levels of serotonin. Serotonin is needed for nerve and brain cells to function properly. S/S include: confusion, hallucinations, nausea, diarrhea, tremor, sweating, shivering, vasoconstriction, muscle twitching, tremor, agitation, headache, pupil dilation and/or coma. Different combination medications can cause this. For example: Oxycodone, hydrocodone, tramadol, Demerol, fentanyl, Subutex, Linezolid, Zofran, Reglan, Zyprexa, Delsym, Valproic acid, buspar, lithium, St. Johns wort, ginseng. Taking any of these in combination with SSRI’s, TCAs, MAOIs put someone at risks for serotonin syndrome. I see these combinations all the time.

* Has anyone ever experienced or witnessed Serotonin Syndrome?
  + [Collapse Subdiscussion](https://king.instructure.com/courses/5942/discussion_topics/35739)[Eric Beaulieu](https://king.instructure.com/courses/5942/users/4866)

[**Eric Beaulieu**](https://king.instructure.com/courses/5942/users/4866)

Feb 16, 2020Feb 16 at 7:21pm

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Reply 2

Hello Karen Hobbs,

Personally, I have not witnessed Serotonin Syndrome.  “Serotonin syndrome is a potentially life-threatening condition associated with increased serotonergic activity in the central nervous system (Boyer, 2019). According to Boyer (2019), the majority of serotonin syndrome is seen in the first 24 hours, and mostly within six hours of initiation or change in the patient’s medications. “The diagnosis of serotonin syndrome is made solely on clinical grounds using the Hunter Criteria; a detailed history and thorough physical and neurologic examination are essential” (Boyer, 2019). Boyer (2019) suggests sedating the patient with benzodiazepines for controlling agitation which will also help to correct heart rate and blood pressure. Boyer (2019) also recommends controlling the patient’s hyperthermia with sedation, paralysis and tracheal intubation. Boyer (2019) summarized the initial treatment of serotonin syndrome as discontinuation of all serotonergic agents, supportive care, sedation with benzodiazepines, and administration of serotonin antagonists. I hope this helps your question.

Best Wishes,

Eric M Beaulieu

References

Boyer, E. W. (2020, January 10). Serotonin syndrome (serotonin toxicity). Retrieved February 16, 2020, from https://www.uptodate.com/contents/serotonin-syndrome-serotonin-toxicity?csi=d4c20eca-dd4c-4ddd-8769-28e70bb822a4&source=contentShare

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[**Jennifer Miller**](https://king.instructure.com/courses/5942/users/5191)

Feb 16, 2020Feb 16 at 4:15pm

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5006- Discussion Board Week 6

Three things I have learned:

* + Ace inhibitors such as Lisinopril are typically a first line drug of choice for hypertension. However, they have shown to not be as effective in African American patients when compared to white populations (Robinson & Woo, p. 304).
  + While I was familiar that Amoxicillin was the treatment of choice for otitis media, I didn’t realize what the specific guidelines for prescribing it were. Antibiotics should be prescribed for children younger than 6 months old with AOM, or for older children who have been symptomatic with moderate to severe ear pain for greater than 48 hours or have a fever of greater than 102.2 (Robinson & Woo, p. 1261).
  + During my women’s health rotation, I have seen a significant amount of patient’s requesting phentermine for weight loss. I have also seen common complaints of insomnia, hypertension, and palpitations.  Although I have never been a big advocate of weight loss drugs except in cases of extreme obesity that has not been successful to treat with proper diet and exercise, I am beginning to understand that they may be beneficial if prescribed correctly.  In lieu of Phentermine, I have learned that Lorcaserin may be a better choice to prescribe as it is not a stimulant and doesn’t tend to alter sleeping patterns.  Diethylpropion would also be a better choice to prescribe for patients with hypertension or cardiovascular problems as it is recommended a safer choice over phentermine (Robinson & Woo, p. 227).

Two ways I will use what I have learned in practice:

* + Instead of prescribing an ace-inhibitor such as Lisinopril as a first line drug of choice for black patients, I will choose a calcium channel blocker such as Norvasc.
  + I will be sure to follow the guidelines when treating otitis media in pediatric patients. Although some parents will not understand why an antibiotic is not automatically given, I will have to do good patient education to help them understand if an antibiotic is not indicated.

One question I still have:

I am still a little confused on prescribing anti-hypertensive medications.  If I prescribe an ace inhibitor first line, but it doesn’t seem to be controlling the blood pressure, do I just need to keep increasing the dose?  I know adding a diuretic is also helpful.  But at what point do I switch classes of medications or combine medications?

Reference

Robinson, M., Woo, T. (2016).  *Pharmacotherapeutics for advanced practice nurse prescribers.*Philadelphia, PA: F.A. Davis Company

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[**Karen Hobbs**](https://king.instructure.com/courses/5942/users/403)

Feb 16, 2020Feb 16 at 5:27pm

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Jennifer,

Great post. Anti-hypertensives are a little confusing for me too, so I understand what you mean.

For newly diagnosed hypertension, providers seem to prescribe either loop diuretics, ARBs or ACE inhibitor more frequently. However, according to the Mayo Clinic, "If you have chest pain (angina) related to coronary artery disease, your doctor may recommend a beta-blocker to lower blood pressure, prevent chest pain, reduce your heart rate and decrease your risk of death. If you have diabetes and high blood pressure, taking a diuretic plus an ACE inhibitor can decrease your risk of a heart attack and stroke. If you have diabetes, high blood pressure and kidney disease, you may need an ACE inhibitor or an angiotensin II receptor blocker (What to know when choosing Blood pressure meds, 2019)."

My husband was diagnosed with hypertension, and his PCP prescribed Lisinopril 10mg daily at first. We kept a daily B/P diary and followed up in 1 month. This RX wasn't working for him, so the PCP increased the Lisinopril to 20mg daily. We followed up again in another month and still no good results. At this point, the PCP decided to start him on Losartan 50 mg daily. He now has controlled B/P's and no side effects. I think it is trial and error at first and then just finding the right medication.

Hope this helps.

Angel

What to know when choosing blood pressure meds. (2019). Retrieved 16 February 2020, from https://www.mayoclinic.org/diseases-conditions/high-blood-pressure/in-depth/high-blood-pressure-medication/art-20046280

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Feb 16, 2020Feb 16 at 6:55pm

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REPLY 1

Hello Jennifer Miller,

I enjoyed your initial post and it was very informative. Regarding your question about prescribing antihypertensive medications, I have done some research. According to Basile & Bloch (2019), lifestyle modifications should be prescribed to all patients with elevated blood pressure. Basile & Bloch (2019) summarize lifestyle modifications as dietary salt restriction, potassium supplementation, weight loss, DASH diet, and limit alcohol intake. “When more than one agent is needed to control the blood pressure, we recommend therapy with a long-acting ACE inhibitor or ARB in concert with a long-acting dihydropyridine calcium channel blocker” (Basile, Bloch, 2019).  Basile & Bloch (2019) emphasize that an ACE inhibitor and ARBS should not be used together.  It is important to note beta-blockers are no longer recommended as initial monotherapy. According to Baslie & Block (2019), after antihypertensive therapy is initiated, patients should be re-evaluated, and doses should be increased monthly until desired blood pressure control is achieved.  After blood pressure control is achieved the regimen should be continued and reevaluated in six months.

Regards,

Eric Beaulieu

References

Basile, J., & Bloch, M. J. (2019, May 2). Overview of hypertension in adults. Retrieved February 16, 2020, from https://www.uptodate.com/contents/overview-of-hypertension-in-adults?csi=16fa3e60-e813-4e8e-a259-9f08b1917e8c&source=contentShare

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[**Eric Beaulieu**](https://king.instructure.com/courses/5942/users/4866)

Feb 16, 2020Feb 16 at 6:22pm

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Initial Post

3-2-1 DB Pharmacology

**---Three new things I have learned regarding a specific drug or class this week.**

* + I learned gout was the first form of arthritis to be recognized as crystal-induced. Gout is caused by a change in purine metabolism, which end product is uric acid.  When uric acid levels are very high (hyperuricemia) the excess uric acid is deposited into various tissues in the form of crystals. I learned that 50% of gout is involved with the great toe (Robinson & Woo, 2016, p. 801). Gout medications such as Allopurinol and colchicine have poor results in patients with renal impairment. (Robinson & Woo, 2016, p. 802).
  + I learned beta-blockers are one of the first-line choices for preventing migraines. (Robinson & Woo, 2016, p. 1049).The exact mechanism of action is unknown. However, research suggests beta-blockers may affect the catecholaminergic system and brain serotonin receptors. Beta-blockers also prevent arterial dilation by blocking beta receptors in vascular smooth muscle. The only FDA approved beta-blockers to prevent migraines are propranolol and timolol. (Robinson & Woo, 2016, p. 1050).
  + I learned about medication-overuse headaches. Medication-overuse should be considered in any patient who reports daily use of analgesics. The headache reoccurs as the medication wears off and the patient takes another dose of the medication to obtain relief. (Robinson & Woo, 2016, p. 1057). Ergotamine or the OTC analgesics is believed to contribute to medication-overuse headaches.  “Ergotamine causes a clear pharmacological dependence and subsequent withdrawal” (Robinson & Woo, 2016, p. 1057). Therefore, the patient must be detoxified of the substance before additional therapies can be provided.

**Two things you will change about how you prescribe and/or use the drug or how you will educate patients about the drug.**

* + I will watch and monitor patients for signs of any symptoms of medication-overuse headaches. I will follow the guidelines outlined by the International Headache Society for diagnostic criteria. I will ensure my patients who are using abortive agents more than two times per week are on a preventative regimen as well. I will educate patients about the importance of keeping a trigger diary to help provide nonpharmacological treatment recommendations.
  + When I am prescribing medications to my future patients for gout, I will always obtain a baseline LFTs, urate levels and renal functions before initiating treatments. When prescribing allopurinol, I will educate patients about the maculopapular rash that can be associated with a severe reaction to allopurinol (Robinson & Woo, 2016, p. 801).

**---One question I still have about this week’s topic.**

Botox is approved for the treatment of migraines. When do you refer the patient for Botox therapy for Migraines? What are the major adverse drug reactions? What is the standard patient education for patients receiving Botox for migraines?

References

Robinson, M., Woo, T. (2016).  *Pharmacotherapeutics for advanced practice nurse prescribers.*Philadelphia, PA: F.A. Davis Company

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[**Megan Rigsby**](https://king.instructure.com/courses/5942/users/4938)

Feb 20, 2020Feb 20 at 8:31am

[Manage Discussion Entry](https://king.instructure.com/courses/5942/discussion_topics/35739)

Hey Eric,

I enjoyed reading your post! According to NICE ( National Institute for Health and Care Excellence), The guidelines for pharmacological treatment of migraines states that a patient can be referred for botox treatment once they have failed to respond to at least 3 preventative treatments ( amitriptyline, topirimate, etc.) According to the American Migraine Foundation, common adverse effects include: neck pain or stiffness, "wobbly neck" ( muscle weakness in the neck),  droopy eyelid, muscle aches, crooked smile, eye dryness, or pain and swelling at the injection site. For education of the patient, it would be important to teach the patient how the medication is administered and what the patient can expect afterwards, how often the patient can expect to receive the medication, adverse effects, the cost of the medication, and when to expect improvement in migraines. I hope this helps!

References:

American Migraine Foundation. (2019.)  *Botox- A for Suppression of Chronic Migraine: Commonly Asked Questions.* Retrieved from: [https://americanmigrainefoundation.org/resource-library/botox-suppression-chronic-migraine-commonly-asked-questionsh/ (Links to an external site.)](https://americanmigrainefoundation.org/resource-library/botox-suppression-chronic-migraine-commonly-asked-questionsh/)

National Institute for Health and Care Excellence. ( 2012.) *Botulinum Toxin Type A for the Prevention of Headaches in Adults with Chronic Migraines*. Retrieved from: [https://www.nice.org.uk/guidance/ta260 (Links to an external site.)](https://www.nice.org.uk/guidance/ta260)

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Feb 16, 2020Feb 16 at 9:14pm

[Manage Discussion Entry](https://king.instructure.com/courses/5942/discussion_topics/35739)

1. I learned that there are different stages of hypertension and that stage 2 hypertension is to be treated with 2 medications. I also learned that diuretics block insulin, therefore causing blood glucose levels to increase.

2. I learned that statin drugs can cause rhabdomyolysis and that the first indicator of this is tea colored urine. I knew that statins were to be given at bedtime but did not know the rationale for this was due to increased cholesterol synthesis at night.

3. I learned that there is criteria for treating otitis media and that if a child over 2 is asymptomatic, you should wait and see and that children 6 months to 2 years are almost always treated with antibiotics.

1. I will be mindful when prescribing diuretics to patients with Diabetes and ensure that I provide education regarding the risk of increased blood glucose levels and the need for increased monitoring.

2. I will educate patients that are receiving statin drugs to watch for tea colored urine and to report this immediately. If this happens, CPK levels will need to be drawn and the statin drug will need to be stopped if CPK levels are over 10 times the normal level.

One question I still have is: If a patient is diagnosed with pneumonia, how do you determine if they need oral or IV antibiotics?

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[**Christina Perkins**](https://king.instructure.com/courses/5942/users/2065)

Feb 18, 2020Feb 18 at 4:31pm

[Manage Discussion Entry](https://king.instructure.com/courses/5942/discussion_topics/35739)

Leanna, good question and to answer your question I researched about patient's with pneumonia and it is all situational.  Most patient's who are diagnosed with pneumonia are given oral medications with the hopes of being cured at home.  The first thing to determine is which type of pneumonia the patient has whether it is bacterial, viral, or fungi which is very uncommon.  Bacteria is the most common form of pneumonia and can be treated with antibiotics, and most likely the patient will see improvement in 1 to 3 days.  Viral pneumonia is caused mostly by the flu in adults and RSV in children, and in most cases heal on their own without treatment.  Fungi is the least common form of pneumonia, but it is also the most serious and the most likely form that you will receive IV medication for.  That isn't to say it isn't used in the others, but only in severe cases.

File, T. (2019, October 4). Patient education: Pneumonia in adults (Beyond the Basics). Retrieved February 18, 2020, from https://www.uptodate.com/contents/pneumonia-in-adults-beyond-the-basics#H4

Pneumonia. (n.d.). Retrieved February 18, 2020, from https://www.nhlbi.nih.gov/health-topics/pneumonia

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[**Vanessa Bare**](https://king.instructure.com/courses/5942/users/5306)

Feb 18, 2020Feb 18 at 7:09pm

[Manage Discussion Entry](https://king.instructure.com/courses/5942/discussion_topics/35739)

Leanna,

 You asked a very good question.  This is where knowing your patient's social situation will benefit in deciding on treatment.  Deciding whether a patient with community acquired pneumonia can be safely treated as an outpatient or requires hospital admission for IV antibiotics and close observation is an essential first step in management. While severity of illness is the key determinant, other factors should also be taken into consideration when deciding on treatment. These should include the ability to keep up with oral intake, whether the patient is going to adhere to medication regiment, history of or current drug abuse, mental illness, cognitive or functional impairment, and living or social circumstances. When the patient is seen in the clinic and not sent to the hospital they will not receive their first dose of medication until they fill their prescription they should be instructed to fill their antibiotic on the way home and start immediately for the best possible outcome (Uptodate, 2020).

Great question!

-Vanessa

                                                                                 Reference:                                                                                                            Retrieved February 18, 2020, from https://www.uptodate.com/contents/treatment-of-community-acquired-pneumonia-in-adults-in-the-outpatient-setting?search=pneumonia treatment adult&source=search\_result&selectedTitle=1~150&usage\_type=default&display\_rank=1

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Feb 19, 2020Feb 19 at 6:08pm

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Hello Leanna,

That is a great question and one that I have wondered myself.  From what I understand, it really just is a case by case decision and there are a few factors to consider in your choice of IV antibiotics versus oral administration or if your patient should be admitted to a hospital.  The American Thoracic Society has set forth standards of care in regards to pneumonia.  According to Robinson and Woo (2016), patients are broken down into categories of severely ill and not severely ill and also those patients who may require hospitalization and ICU admission.  These categories include the following:

* + - Otherwise healthy patients with no cardiopulmonary comorbidities and those who are not at risk for pneumonia that is drug resistant.
    - Patients with a history of cardiopulmonary diseases such as COPD, CHF and also those with renal or liver disease, those who are immunosuppressed, age greater than 65 years old, cancer patients, gram-negative bacteria diagnosis, or those who have been on antibiotics within the last three months. These are outpatients.
    - Patients requiring admission to the hospital who have the above mentioned risk factors, have been in a nursing home or who may require hospital admission due to the severity of their specific case.
    - Patients who require ICU admission; those at risk for Pseudomonas Aeruginosa.

So, keeping in mind these guidelines, you really need to just look at your patient individually and recognize if there are risk factors, disease comorbidities and severity enough of symptoms or clinical data (cultures, x-rays, etc.) that warrant the need for IV antibiotic administration and/or hospitalization.  The American Thoracic Society has their own website and it is a great tool to use for guidelines and treatments for not only pneumonia, but other pulmonary issues as well.  You can access it by going to www.thoracic.org.

Reference

Robinson, M., Woo, T. (2016).  *Pharmacotherapeutics for advanced practice nurse prescribers.*Philadelphia, PA: F.A. Davis Company

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Feb 17, 2020Feb 17 at 12am

[Manage Discussion Entry](https://king.instructure.com/courses/5942/discussion_topics/35739)

Three new things I have learned

1. Intranasal corticosteroids (Rhinocort, Flonase, Nasonex), do not have an immediate effect, it generally takes 3-12 hours, someone may not feel the maximum effects for 1-2 weeks.

2. Blood pressure medication should only be titrated every 4-6 weeks. I also learned to add a second medication before maxing out the first medication. Finally to allow older adults to be slightly hypertensive with a systolic of 150-150 if they are asymptomatic.

3.  I learned to Rosuvastatin is the most potent in the statin group. I also learned that statins are titrated off of the LDL. Verapamil, azole fungals, diltalizem, erythromycin, and fluoxetine can increase statin concentrations. Rifampin, phenytoin, and phenobarbital can decrease statin concentration.

Two ways I can change about how i prescribe an or use the drug

1. I will educate my patients to use intranasal corticosteroids daily and continue the regimen for 2 weeks, if do not feel symptomatic relief at that point we will change therapy.

2. I will cautiously titrate blood pressure mediation, educating the patient to keep a log at home of their recordings and bring to each office visit, when i change therapy I will order 0 refills on the prescription and have the patient follow up in 4 weeks.

One question I still have   
  
The provider I precept with has changed her patients that are currently on a  corticosteroid, long acting beta agonist, and an ultra long beta agonist to the medication Trelegy. Has anyone seen positive results with this medication or know any reasoning not to do this?

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[**Megan Rigsby**](https://king.instructure.com/courses/5942/users/4938)

Feb 20, 2020Feb 20 at 8:56am

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Hey Christina!

My preceptor has also been changing a lot of her COPD patients to the Trelegy inhaler! So far, our patients at their follow up appointments only report positive changes since beginning the inhaler. Trelegy is an inhaler that contains a corticosteroid ( fluticasone furoate), a long acting muscarinic antagonist ( umeclidinium), and an ultra- long- acting B2 adrenoreceptor agonist ( vilanterol.) So really instead of having 3 separate inhalers, they just have one with the same medications. I feel this would lead to better patient adherence! However, one reason I wouldn't prescribe this drug is the cost! On average, the medication with no insurance, the inhaler cost around $585 monthly! Some other things to consider would be if the pt is immunocompromised, or if the patient has bad reactions to Trelegy. I hope this helps!!

References:

GSK. ( 2019.) *Trelegy Approved Use & Safety Info*. Retrieved from: [https://www.trelegy.com/search-results/?\_charset\_=UTF-8&q=contraindications&%3Acq\_csrf\_token= (Links to an external site.)](https://www.trelegy.com/search-results/?_charset_=UTF-8&q=contraindications&%3Acq_csrf_token=)

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Feb 17, 2020Feb 17 at 10:02pm

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**3 new things I learned regarding a specific drug or class this week**

* + Amoxicillin is the first line drug treatment for sinusitis. Augmentin can also be used. If symptoms continue to worsen after 72 hours of taking medication – the patient should be switched to Augmentin, if previously on Augmentin. If the patient was already on Augmentin, patient should be placed on Levaquin.
  + Cough suppressants should not be used in patients with a productive cough or COPD
  + Topical decongestants, such as Oxymetazoline, should not be used for more than 3 days at a time

**2 things I will change about how I prescribe and/or use the drug or how I will educate patients about the drug**

* + When treating patients with sinusitis, I will be sure to educate the patient on the importance of letting me know if their symptoms are worse 72 hours after antibiotic administration – this may indicate that a change in medication is needed.
  + When treating patient’s with sinusitis, bronchitis, etc. that may have a productive cough, I will educate them on the importance of not using cough suppressants. I will be sure to educate them on the importance of coughing up the mucus in their lungs to get rid of infection.

**1 question that I still have about this week’s topics**

* + Are cephalosporins, clindamycin, or macrolides as effective in treating Group A Beta-Hemolytic Streptococcal infections as Penicillin is?

Reference:

Robinson, M., Woo, T. (2016).  *Pharmacotherapeutics for advanced practice nurse prescribers.*Philadelphia, PA: F.A. Davis Company

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[**Leanna Ward**](https://king.instructure.com/courses/5942/users/5621)

Feb 20, 2020Feb 20 at 8:10pm

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Madison,

Interestingly, I found a study that states that those antibiotics are actually more effective in treating Group A Beta-Hemolytic Strept (GABHS) than penicillin. According to Brook (2017, p. 293), macrolides and cephalosporins are more effective clinically and bacteriologically than penicillin in acute GABHS, while lincomycin, clindamycin, and amoxicillin-clavulanate are more effective in relapsing GABHS. From what I read, some of this is due to resistance and noncompliance since penicillin is usually taken for a longer period of time.

Brook I. (2017). Treatment challenges of group A beta-hemolytic streptococcal pharyngo-tonsillitis. *International archives of otorhinolaryngology*, *21*(3), 286–296. https://doi.org/10.1055/s-0036-1584294

Edited by [Leanna Ward](https://king.instructure.com/courses/5942/users/5621) on Feb 20 at 8:14pm

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[Collapse Subdiscussion](https://king.instructure.com/courses/5942/discussion_topics/35739)[Vanessa Bare](https://king.instructure.com/courses/5942/users/5306)

[**Vanessa Bare**](https://king.instructure.com/courses/5942/users/5306)

Feb 18, 2020Feb 18 at 2:53pm

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3 Things I have learned:

* + Codeine: Diminish cough reflex by direct inhibition of the cough center in the medulla. No more effective than DM or placebo, decrease efficiency in cough related to upper respiratory infection.  Potential for abuse
  + First line antibiotic choice for sinusitis is amoxicillin in adults and children.  Adult dosing is 500mg three times per day. In children the dosing is 80-90 mg/kg/day two times per day in high risk children and 45 mg/kg/day in low risk children.  Another choice of antibiotic is Augmentin 875/125mg two times per day for 7-10 days.  If the patient has an allergy to PNC in adults use doxycycline or levofloxacin.  In children use cefdinir, cefuroxime or cefpodoxime.
  + Asthma treatment includes inhaled steroids. Inhaled steroids decrease the number of circulating eosinophils and mast cells in airways and decreases inflammation.  Inhaled steroids are used as a long-term prevention of symptoms and should not be used as a rescue medication.  They should be used cautiously in children due to the risk of growth suppression.

2 Ways I will use what I have learned:

* + I will make sure to assess the need of codeine as a medication in treating URI. Since codeine has shown no real effect in decreasing cough related to URI and it has a potential for abuse, I would probably not prescribe a medication containing codeine for URI.
  + Using inhaled steroids in treatment for asthma I would ensure that correct education is given to the patient before use. The patient should understand that this medication is for long-term use and should NOT be used as a rescue inhaler.  It is also important that the patient knows that this medication will not be working at its full potential until about 2 weeks after use has started. I will make sure to provide all the proper education when prescribing this medication.

1 Question I still have:

* + In treating children with asthma what other long-term medication can be used other than inhaled steroids since they can affect their growth?

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[Collapse Subdiscussion](https://king.instructure.com/courses/5942/discussion_topics/35739)[Roselee Cathey](https://king.instructure.com/courses/5942/users/5246)

[**Roselee Cathey**](https://king.instructure.com/courses/5942/users/5246)

Feb 18, 2020Feb 18 at 6:19pm

[Manage Discussion Entry](https://king.instructure.com/courses/5942/discussion_topics/35739)

**Three new things you learned regarding a specific drug or class this week**

#1) Hypertension is known as one of the primary causes of maternal and fetal and neonatal morbidity and mortality (Woo & Robinson, 2016). Considering that the majority of antihypertensive treatments fall within Category C, it is essential to learn that Methyldopa (Aldomet) is the recommended treatment (Woo & Robinson, 2016). I've discovered that Methyldopa is an Alpha 2 Agonist, and activation of these receptors inhibits the cardio accelaration and vasoconstriction centers in the brain (Woo & Robinson, 2016). As a result, the peripheral outflow of norepinephrine is decreased, which leads to decreased peripheral resistance, renal vascular resistance, heart rate, and blood pressure (Woo & Robinson, 2016). An essential factor to note is that lowering blood pressure by reducing the sympathetic function can lead to a compensatory effect resulting in sodium retention and blood volume expansion (Woo & Robinson, 2016). Therefore, a diuretic can be considered combined with Methyldopa.

#2) Asthma, besides chronic obstructive pulmonary disease (COPC), is one of the most common chronic respiratory diseases worldwide (Woo & Robinson, 2016). It is important to note that pharmacological management of asthma is in concordance with the stepwise approach recommendations from "*The Expert Panel Report 3: Guidelines*" ( Woo & Robinson, 2016). I learned that, although the step therapy serves as a framework, treatment should be based on an individual's circumstance and response to treatment. For example, for mild intermittent asthma, if a patient uses a short-acting beta2 agonist more than twice a week, step 2 therapy or initiation of long-therapy-control treatment is warranted. The most commonly used short-acting beta two agonist bronchodilators are Albuterol (ProAir, Ventolin, Proventil) ( Woo & Robinson, 2016). Interestingly, "albuterol has fewer cardiac and CNS effects than some of the other beta-agonists, therefore, often the first-line therapy (Woo & Robinson, 2016, p. 362).

#3) I learned that otitis externa (OE), commonly known as swimmer's ears, could easily be treated; however, it can have serious complications (Woo & Robinson, 2016). For acute otitis media, once determined that the tympanic membrane (TM) is intact, a topical medication such as a steroid/antibiotic drop can be used. Examples include Cortisporin, Pediotic, Ciprodex, Cipro HC ( containing corticosteroid and antibiotics ), antibiotic alone ( gentamycin, ofloxacin ), or Otic Domeboro, Burrow's Otic Vosol, Vosol HC drops containing acid are medications (Woo & Robinson, 2016). It is noted that "the exact mechanism of action for topical corticosteroids is not known; however, they are thought to act by the induction of phospholipase A2 inhibitory proteins" (Woo & Robinson, 2016, p. 858). These inhibitory proteins control the mediators of inflammation (prostaglandin and leukotrienes ) therefore reduces inflammation ( Woo & Robinson, 2016). I've learned that neomycin specifically targets S. aureus and Proteus and Enterobacter species, while Polymicyn targets gram-negative bacteria such as P. aeruginosa, staphylococci, S. pneumoniae (Woo & Robinson, 2016). A vital factor to consider is that "hypersensitivity to any component of the product is contraindications to its use" (Woo & Robinson, 2016, p. 858). Specifically, Ciprofloxacin and Cortisporin otic suspension are contraindicated if the tympanic membrane is perforated TM (Woo & Robinson, 2016).

**Two things that you will change about how you prescribe and use the drug or how you will educate patients about the drug**

**#1)**Clinically, before initiating Methyldopa in treating hypertension, a baseline of blood pressure should be taken, and with each change in dosage. Educate the importance of keeping a blood pressure diary at home. Furthermore, weight and other indicators of fluid retention should be monitored. Discuss the importance of medication adherence. Instruct patients to take medication at the same time each day, even though they are feeling well. Explain to the patient that missed doses increase the risk of rebound hypertension. Most importantly, advise a patient that "they should make certain they have enough medications available for weekends, holidays, and vacation" (Woo & Robinson, 2016, p. 181).

#2) Prescribing bronchodilators via meter dose may be challenging for newly diagnosed patients. Specifically, coordinating the release of the medication from the inhaler with a deep breath. Therefore, a spacer device will be included with the prescription, which will increase depositing the drug in the lungs instead of in the mouth. To verify proper use, instructions and demonstrations should be included in follow up visits.

**Question**

Since Ciprofloxacin and Cortisporin otic suspension are contraindicated to treat AOM with a known perforated tympanic membrane, what would be an alternative treatment?

 References

Woo, T. M., & Robinson, M. V. (2016). *Pharmacotherapeutics: For advanced practice nurse prescribers* (4th ed.). Philadelphia, PA: F.A. Davis Company.

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[Collapse Subdiscussion](https://king.instructure.com/courses/5942/discussion_topics/35739)[Misty Mabe](https://king.instructure.com/courses/5942/users/5601)

[**Misty Mabe**](https://king.instructure.com/courses/5942/users/5601)

Feb 19, 2020Feb 19 at 8:29pm

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Great question Roselee.

Antibiotic ear drops such as ofloxacin otic drops may be used in AOM with tympanic eardrum perforation. Directions for use would be five drops in the affected ear two times per day for three to five days (Evans & Handler, 2019).

I also found that water should be kept out of the affected ear, hearing tests should be performed to assess initial hearing loss, a four week follow up with the pcp should be done to assess healing and to reevaluate hearing loss, and patients may be referred to an Otolaryngologist for a non-healing injury or persistent hearing loss greater than four weeks (Evans & Handler, 2019). I hope this helps!

References

Evans, A. K., & Handler, S. D. (2019, October 7). Evaluation and management of middle ear trauma. *UpToDate*.

Edited by [Misty Mabe](https://king.instructure.com/courses/5942/users/5601) on Feb 19 at 8:32pm

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[Collapse Subdiscussion](https://king.instructure.com/courses/5942/discussion_topics/35739)[Leanna Ward](https://king.instructure.com/courses/5942/users/5621)

[**Leanna Ward**](https://king.instructure.com/courses/5942/users/5621)

Feb 20, 2020Feb 20 at 7:59pm

[Manage Discussion Entry](https://king.instructure.com/courses/5942/discussion_topics/35739)

Rosalee,

Oflaxacin is the antibiotic ear drop that can be used with a perforated eardrum. Systemic antibiotics such as Bactrim and Amoxicillin are also often used in patients with a perforated eardrum. According to Howard (2018), there is a risk of ototoxicity from topically applied eardrops when treating ear infections concurrent with tympanic membrane perforation, therefore any antibiotic ear drops with the risk of ototoxicity such as gentamicin, neomycin or tobramycin, should not be used.

Howard, M. L. (2018). Middle ear, tympanic membrane, perforations treatment & management. *Medscape*. Retrieved from https://emedicine.medscape.com/article/858684-treatment

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[Collapse Subdiscussion](https://king.instructure.com/courses/5942/discussion_topics/35739)[Madison Starnes](https://king.instructure.com/courses/5942/users/5129)

[**Madison Starnes**](https://king.instructure.com/courses/5942/users/5129)

Feb 23, 2020Feb 23 at 6:14pm

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Great question, Vanessa!

Steroids seem to be a very effective treatment option for asthma. Unfortunately, like you said, they do come with the side effect of growth suppression. According to *UpToDate,*Theophylline is also used for the management of asthma in children. Theophylline has bronchodilatory and anti-inflammatory properties (Sawicki & Haver, 2020). However, Theophylline has serious side effects that must be considered. Side effects include: cardiac arrhythmias, seizures, and death (Sawicki & Haver, 2020). Cromolyn can also be used to treat asthma but has not been found to be as effective as inhaled glucocorticoids (Sawicki & Haver, 2020).

Reference

Sawicki, G. & Haver, K. (2020). Asthma in children younger than 12 years: Management of persistent asthma with controller therapies. In R.A. Wood, G. Redding, & E. TePas (Eds.), *UpToDate.*Retrieved February 23, 2020, from [https://www-uptodate-com.ezproxy.king.edu/contents/asthma-in-children-younger-than-12-years-management-of-persistent-asthma-with-controller-therapies?search=treating%20asthma%20in%20children&source=search\_result&selectedTitle=3~150&usage\_type=default&display\_rank=3 (Links to an external site.)](https://www-uptodate-com.ezproxy.king.edu/contents/asthma-in-children-younger-than-12-years-management-of-persistent-asthma-with-controller-therapies?search=treating%20asthma%20in%20children&source=search_result&selectedTitle=3~150&usage_type=default&display_rank=3)

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[Collapse Subdiscussion](https://king.instructure.com/courses/5942/discussion_topics/35739)[Steven Derick Joyce](https://king.instructure.com/courses/5942/users/5263)

[**Steven Derick Joyce**](https://king.instructure.com/courses/5942/users/5263)

Feb 18, 2020Feb 18 at 9:15pm

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3 new things I learned:

* + When reading about gout and the treatment for this issue, I learned that colchicine, probenecid, and sulfinpyrazone are all used with caution in patients who have a spastic colon or PUD. These drugs can make these issues worse.
  + When learning about migraines, I did not know that there were 3 categories of migraines. Migraine with aura (classic migraine), migraine without aura (common migraine), and complicated migraine are the three categories.
  + In chapter 52 when reading about adjuvant analgesics, I learned that cyclobenzaprine and other muscle relaxants can help treat symptoms of fibromyalgia.

2 things I will change:

* + When treating patients with gout, I will take extra precautions to ensure that the patient does not have a history of PUD or spastic colon when prescribing gout medications.
  + When assessing patients with migraines, I will take extra time to discuss symptoms in order to be better at categorizing the type of migraine that they have.

1 Question:

* + Should the diagnosis  of fibromyalgia be made by PCPs or should a patient be seen by a Rheumatologist to be officially diagnosed with this?

Woo, T. M., & Robinson, M. V. (2016). *Pharmacotherapeutics: For advanced practice nurse prescribers* (4th ed.). Philadelphia, PA: F.A. Davis Company

Edited by [Steven Derick Joyce](https://king.instructure.com/courses/5942/users/5263) on Feb 18 at 9:16pm

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[Collapse Subdiscussion](https://king.instructure.com/courses/5942/discussion_topics/35739)[Aaron Velasquez](https://king.instructure.com/courses/5942/users/5630)

[**Aaron Velasquez**](https://king.instructure.com/courses/5942/users/5630)

Feb 19, 2020Feb 19 at 11:33am

[Manage Discussion Entry](https://king.instructure.com/courses/5942/discussion_topics/35739)

* + Children 6 months up to 2 years old are treated with antibiotics. I learned that otitis media can sometimes be asymptomatic. This can be very difficult to diagnose because the patient may not be experiencing some of the hallmark signs. But if a patient is not symptomatic and you suspect that the patient does have otitis media; it is best to wait.
  + I learned that you need to be cautious when prescribing elderly patients diphenhydramine. Diphenhydramine cause an altered mental status in elderly patients and puts them at risk for other injuries. Elderly patients that are experiencing allergic reactions need to be prescribed low doses at first.
  + I also learned that antihistamines can cross the blood-brain barrier. 2nd generation antihistamines do not cross the blood-brain barrier which makes them safer for the patient to take.

I will be sure to do proper patient education when patients present with otitis media. I will ensure they understand when to give their children medication and what the signs and symptoms are.  I will also make sure to be cautious when prescribing antihistamines and diphenhydramine.

Question:

How long should you wait to prescribe patient antibiotics for otitis media if they are asymptomatic? Would it be smart to prescribe with the instructions to give the medication only if the patient starts to present with fever and pain?

Reference:

Robinson, M., Woo, T. (2016).  Pharmacotherapeutics for advanced practice nurse prescribers. Philadelphia, PA: F.A. Davis Company

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[Collapse Subdiscussion](https://king.instructure.com/courses/5942/discussion_topics/35739)[Megan Sturdivant](https://king.instructure.com/courses/5942/users/1164)

[**Megan Sturdivant**](https://king.instructure.com/courses/5942/users/1164)

Feb 23, 2020Feb 23 at 12:31am

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Great post Aaron,

After some research I found that the decision to observe without immediate antibiotics should be made in conjunction with caregivers, with a plan for pain management at the outset and a plan for follow-up within 48 to 72 hours so antibiotics can be started for persistent or worsening symptoms. “Clinicians may also give caregivers an antibiotic prescription with instructions to have it filled only under certain circumstances, the so-called wait-and-see prescription (WASP). This approach seems to avoid antibiotic use in up to two thirds of children selected for observation” (Tunkel, 2014). Most people with otitis media have pain and should be instructed to use Tylenol or Ibuprofen as needed for the pain. The decision of whether to treat with initial antibiotics is based on age, severity of symptoms, the presence of otorrhea, and laterality. “In the 2013 AAP guideline, antibiotics are recommended for any child with otorrhea, or severe symptoms, or both, and for children younger than 2 years with bilateral AOM” (Tunkel, 2014).

References

Tunkel, D. E. (2014). Contemporary Concepts in Management of Acute Otitis Media in Children. *Journal of Otolaryngology*, 651-672.

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[Collapse Subdiscussion](https://king.instructure.com/courses/5942/discussion_topics/35739)[Candy Bush](https://king.instructure.com/courses/5942/users/179)

[**Candy Bush**](https://king.instructure.com/courses/5942/users/179)

Feb 19, 2020Feb 19 at 2:52pm

[Manage Discussion Entry](https://king.instructure.com/courses/5942/discussion_topics/35739)

Initial post

**3 new things I learned:**

* + When treating a patient with hypertension, the first approach is to address the lifestyle modifications, this is a great opportunity to address many aspects such as weight, exercise, dietary habits and much more. Some patients are not aware of these issues and how they can play a large part in the treatment of hypertension. Next if lifestyle modifications are not working start the patient on a thiazide diuretic. Thiazide diuretics are used in stage I HTN, if the diuretic is not working add a 2nd drug. In stage II HTN generally 2 drugs are used in combination, such as a diuretic and a ACE or ARB. If this medication is still not allowing the patient to achieve a goal blood pressure you may increase the dosages or ultimately refer the patient to a cardiologist for further evaluation.
  + To be cautious when prescribing Beta blockers. Beta 1 receptors are selective to the heart and kidneys. Beta 2 receptors are selective to the lungs, liver and pancreas. Keeping in mind the RAAS system diagram helps me to remember the effects and where and when they will occur.
  + The classification system of asthma- mild intermittent (symptoms less than 2/wk.), mild persistent (Symptoms 3-4/mo.), moderately persistent (daily symptoms), and Severe persistent (symptoms throughout day). Goals of treatment include minimize symptoms, Normal PEF with <20% variation, decrease exacerbations, minimal use of beta-adrenergic agonist, No activity limitations, Minimal adverse medication effects, reduction in long term airway remodeling, and morbidity and mortality. Treatment plan:1st line -inhaled short acting beta agonist, 2nd line- low dose ICS, mast stabilizer, leukotriene modifier, methylxanthine (contraindicated in elderly patients), 3rd line- low dose ICS, long acting beta agonist, medium ICS, may add leukotriene modifier, and methylxanthine to low dose ICS, 4th line- medium ICS and LABA, oral steroids may be added of addition of leukotriene modifier and methylxanthine to a medium dose ICS. A 5th and 6th line of treatment does exist but these patients will need an asthma and allergist referral.

**2 things I will change about prescribing/using a drug or educating patients about the drug:**

* + The patient population in south west VA and northern TN is not as motivated in health prevention as I would like for them to be. In treating HTN, I will educate those patients about lifestyle modifications. But in reality, our general population in this area is more apt to take a pill for HTN than to start a diet to lose 20 lbs or stop smoking. With a healthy patient/ provider relationship I will still give my patients the choice and opportunity of lifestyle modifications before initiating medication for treatment. Unless it is an emergency to get the blood pressure down.
  + I will pay closer attention to my patient’s medication list because I am learning more about the interactions that can occur with food, or other medications**.**

**1question I still have:**

**1.**In babies and children of vaccination age, besides giving combo vaccinations for convenience and less trauma to baby and parent. Do you think we should be giving only 1 or 2 vaccinations at a time in order to not overload the patients’ immune system? Or continue as we are doing?

Reference

Woo, T. M., & Robinson, M. V. (2016). *Pharmacotherapeutics: For advanced practice nurse                  prescribers* (4th ed.). Philadelphia, PA: F.A. Davis Company.

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[Collapse Subdiscussion](https://king.instructure.com/courses/5942/discussion_topics/35739)[Jennifer Miller](https://king.instructure.com/courses/5942/users/5191)

[**Jennifer Miller**](https://king.instructure.com/courses/5942/users/5191)

Feb 19, 2020Feb 19 at 6:36pm

[Manage Discussion Entry](https://king.instructure.com/courses/5942/discussion_topics/35739)

Hello Candy,

That is a great question and also a very common one.  As a former school nurse, I was asked this question a lot by parents.  The World Health Organization(n.d.) actually addressed this in an article recently.  They were talking about six common misconceptions of vaccinations and this was one of the topics- “Giving a child multiple vaccination for different diseases at the same time increases the risk of harmful side effects and can overload the immune system".  Their argument to debunk to this was that children are daily exposed to different foods and environmental factors.  They released the statement, “In the face of these normal events, it seems unlikely that the number of separate antigens contained in childhood vaccines . . . would represent an appreciable added burden on the immune system that would be immuno-suppressive, (Six common misconceptions about vaccinations, n.d.)."  Additionally the CDC released a statement addressing this also.  It stated, "Getting multiple vaccines at the same time has been shown to be safe.  Scientific data show that getting several vaccines at the same time does not cause any chronic health problems. A number of studies have been done to look at the effects of giving various combinations of vaccines, and when every new vaccine is licensed, it has been tested along with the vaccines already recommended for a particular aged child. The recommended vaccines have been shown to be as effective in combination as they are individually.  Sometimes, certain combinations of vaccines given together can cause fever, and occasionally febrile seizures; these are temporary and do not cause any lasting damage. Based on this information, both the Advisory Committee on Immunization Practices and the American Academy of Pediatrics recommend getting all routine childhood vaccines on time (Multiple vaccines and the immune system, n.d.).”

References

Multiple vaccines and the immune system, (n.d.)  *Centers for Disease Control and Prevention.*Retrieved on February 19, 2020 from [https://www.cdc.gov/vaccinesafety/concerns/multiple-vaccines-immunity.html (Links to an external site.)](https://www.cdc.gov/vaccinesafety/concerns/multiple-vaccines-immunity.html).

Six common misconceptions about vaccinations, (n.d.) *World Health Organization.*Retrieved on February 19, 2020 from [https://www.who.int/vaccine\_safety/initiative/detection/immunization\_misconceptions/en/index6.html (Links to an external site.)](https://www.who.int/vaccine_safety/initiative/detection/immunization_misconceptions/en/index6.html)

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[Collapse Subdiscussion](https://king.instructure.com/courses/5942/discussion_topics/35739)[Kirsten Applegate-walton](https://king.instructure.com/courses/5942/users/4961)

[**Kirsten Applegate-walton**](https://king.instructure.com/courses/5942/users/4961)

Feb 19, 2020Feb 19 at 4:16pm

[Manage Discussion Entry](https://king.instructure.com/courses/5942/discussion_topics/35739)

Instructions for 3-2-1 Discussion Boards:

Three new things you learned regarding a specific drug or class this week. (ex: pharmacokinetic processes of absorption, distribution, metabolism (biotransformation) and excretion, potential factors/conditions for drug interactions & adverse effects, mechanism of action, common uses, etc.)\

Three things I learned this week:

1) Topical decongestants-**NOT**to be used more than 3 days due to rebound congestion( Phenylephrine (Neosynephrine), Oxymetazoline (Afrin). I knew that it could cause a rebound, but I did not know that it should not be used more than just 3 days. I will cautiously use that guideline.

2) African Americans and children at greatest risk for hospitalization related to Asthma. That was an interesting statistic for me and would make me more aware to look out for Asthma in this population.

3) With the treatment of Theophylline in COPD patients smokers require a 50% higher dose than recommended due to enzyme induction. I had no clue that was the case and was glad to find out.

Two things you will change about how you prescribe and/or use the drug or how you will educate patients about the drug.

1) I will prescribe topical decongestants correctly and sparingly due to the rebound congestion.

2) I will prescribe an effective dose of Theophylline to my smoking population with COPD.

One question you still have about this week’s topics.

Children with asthma are complex cases. Should general FNPs take care of these cases or send them to Pulmology? Personally, my daughter (10) with asthma sees an pulmologist.

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[**Steven Derick Joyce**](https://king.instructure.com/courses/5942/users/5263)

Feb 23, 2020Feb 23 at 11:11am

[Manage Discussion Entry](https://king.instructure.com/courses/5942/discussion_topics/35739)

Great post, Kirsten. I enjoyed your discussion and I did not know that theophylline in COPD patients that smoke require a 50% higher dose than recommended due to enzyme induction. I think something I struggle with as a student is knowing when to refer patients. I feel that we will get a much better grasp of this concept when we are in practice. I read a very informative article about evidence-based asthma control in pediatric patients. Use of clinical practice guidelines help to identify poorly controlled pediatric patients with asthma and the need for acute care intervention, revision of pharmacological therapy, or pulmonology referrals (Harvey, 2018). Results validate the need for the advanced practice nurse to ensure clinical practice guidelines are used in primary care settings (Harvey, 2018). The way I interpreted the information was that we can use the standard guidelines, but if we aren’t achieving the appropriate outcome, we can always refer the patient to pulmonary then. I also think that we should be monitoring our pediatric asthma patients closely to make sure they don’t need a referral sooner than what we expected. I hope this helped to answer your question.

Harvey, M. (2018). Evidence-based asthma control assessments in pediatric care. *Pediatric Nursing*, *44*(4), 163–168. Retrieved from http://web.b.ebscohost.com.ezproxy.king.edu/ehost/pdfviewer/pdfviewer?vid=9&sid=f54f980b-0cf4-4f96-8871-0fccf45eff23%40sessionmgr103

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[**Megan Sturdivant**](https://king.instructure.com/courses/5942/users/1164)

Feb 19, 2020Feb 19 at 4:57pm

[Manage Discussion Entry](https://king.instructure.com/courses/5942/discussion_topics/35739)

Three new things you learned regarding a specific drug or class this week. (ex: pharmacokinetic processes of absorption, distribution, metabolism (biotransformation) and excretion, potential factors/conditions for drug interactions & adverse effects, mechanism of action, common uses, etc.)

* + In Conjunctivitis-Otitis syndrome, H. influenzae is the cause most of the time. Treatment with high-dose amoxicillin twice a day for 5 to 7 days is the frequent treatment. However, never go over the maximum dose for kids.
  + Respiratory viruses account for 40 to 75% of Acute Otitis Media in children. This is because with allergies, colds and congestion the fluid just sits in the eustachian tubes. For OAM resulting from respiratory viruses we don’t give antibiotics.
  + Antibiotic choices for AOM include Amoxicillin as the first choice followed by Augmentin. If the patient is allergic to penicillin, Cefdinir is a popular option.

-Two things you will change about how you prescribe and/or use the drug or how you will educate patients about the drug.

* + I would actually consider writing a “Safety net” or WASP prescription for a low risk patient with a parent who is levelheaded and has some common sense.
  + I would not order cough suppressants for a patient with COPD.

One question you still have about this week’s topics.

What would be the proper medication to prescribe for a COPD patient who has a persistent cough from flu or respiratory infection?

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[Collapse Subdiscussion](https://king.instructure.com/courses/5942/discussion_topics/35739)[Madison Starnes](https://king.instructure.com/courses/5942/users/5129)

[**Madison Starnes**](https://king.instructure.com/courses/5942/users/5129)

Feb 23, 2020Feb 23 at 5:56pm

[Manage Discussion Entry](https://king.instructure.com/courses/5942/discussion_topics/35739)

Great question, Megan!

Unfortunately, patients with COPD have a harder time when suffering from the flu or respiratory illness. Many times, these patients must be hospitalized. According to *UpToDate,*a cough in patients with COPD can be treated with beta adrenergic agonists, anticholinergic agents, oral glucocorticoids, and antibiotics. Antibiotics should be used in outpatient care of COPD patients with moderate or severe exacerbation of COPD. This is defined as having at least two of the following symptoms - increased dyspnea, increased sputum volume, or increased sputum purulence. Antibiotic therapy should not be used in patients with mild COPD exacerbations (Stoller, 2019).

Reference

Stoller, J.K. (2019). Management of exacerbations of chronic obstructive pulmonary disease. In P.J. Barns & H. Hollingsworth (Eds.), *UpToDate.*Retrieved February 23, 2019, from [https://www-uptodate-com.ezproxy.king.edu/contents/management-of-exacerbations-of-chronic-obstructive-pulmonary-disease?search=medication%20to%20control%20cough%20in%20COPD%20patients&sectionRank=2&usage\_type=default&anchor=H542686680&source=machineLearning&selectedTitle=1~150&display\_rank=1#H542686680 (Links to an external site.)](https://www-uptodate-com.ezproxy.king.edu/contents/management-of-exacerbations-of-chronic-obstructive-pulmonary-disease?search=medication%20to%20control%20cough%20in%20COPD%20patients&sectionRank=2&usage_type=default&anchor=H542686680&source=machineLearning&selectedTitle=1~150&display_rank=1#H542686680)

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[Collapse Subdiscussion](https://king.instructure.com/courses/5942/discussion_topics/35739)[Megan Rigsby](https://king.instructure.com/courses/5942/users/4938)

[**Megan Rigsby**](https://king.instructure.com/courses/5942/users/4938)

Feb 19, 2020Feb 19 at 8:26pm

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3 things I learned:

1. A common side effect of Amiodarone is blue-gray discoloration of the skin. Upon further research of this, this skin discoloration can take MONTHS or YEARS to go away! Even discontinuing the medication will not guarantee this adverse effect will subside.

2. From an article about azithromycin resistance found in week 5, I learned that 80% of pediatric pneumonia under age 2 is viral. I just think this is so interesting, because you would think bacterial pneumonia would also be common in children under age 2 due to immunity reasons.

3. I learned how to classify asthma, and inhalers that should be used in different stages. Its amazing to me how common asthma is. I have seen at least 3 patients a day on my clinical days that have asthma.

2 ways I will educate:

1. I will definitely reinforce that although the blue- gray discoloration from taking amiodarone is alarming, it is benign. It would be important as well to educate before the patient begins amiodarone therapy of this adverse effect.

2. With asthma, it would be important to first choose the severity of the patient's asthma to determine a regimen. Once  that has been determined, it would be important to educate on adverse effects of taking corticosteroids and albuterol inhalers. Also, if they are a newly diagnosed pt, it would be important to teach the patient how to correctly use an inhaler.

1 question I still have:

If OTC meds ( tylenol and ibuprofen) fail at reliving acute migraine headaches, what would be a first line drug to prescribe?

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[Collapse Subdiscussion](https://king.instructure.com/courses/5942/discussion_topics/35739)[Aaron Velasquez](https://king.instructure.com/courses/5942/users/5630)

[**Aaron Velasquez**](https://king.instructure.com/courses/5942/users/5630)

Feb 22, 2020Feb 22 at 9:31pm

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Megan,

That is a good question. It is always good to find the underlying cause to a patient's headaches. Recommending that a patient try and reduce life stressors in combination of OTC medication is a good place to start. If a patient is still not getting relief, a midrange analgesics may need to be prescribed. A combination of products are typically prescribed to work with acetaminophen. Butalbital or isometheptene with acetaminophen have been proven to be an affective treatment for mild to moderate headaches.

Reference:

Robinson, M., Woo, T. (2016).  Pharmacotherapeutics for advanced practice nurse prescribers. Philadelphia, PA: F.A. Davis Company

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[Collapse Subdiscussion](https://king.instructure.com/courses/5942/discussion_topics/35739)[Candy Bush](https://king.instructure.com/courses/5942/users/179)

[**Candy Bush**](https://king.instructure.com/courses/5942/users/179)

Feb 23, 2020Feb 23 at 6:13pm

[Manage Discussion Entry](https://king.instructure.com/courses/5942/discussion_topics/35739)

Megan, great question. Headaches and migraines are a common complaint in the health care field. Healthy and sick patients complain of headaches for one reason or the other. The information I found on headaches specifically migraines states that a migraine is caused by vascular changes . The patient may complain of symptoms such as “photophobia, phonophobia, unilateral pounding headache” (Williams & Fitch, 2018, p. 63). The patient who has tried OTC Tylenol or Ibuprofen with no relief of symptoms should be seen by their primary care provider for a through neurological exam. If the diagnosis reveals a migraine the provider may prescribe an Ergots/ Triptans class medication, this is cautioned in CAD. Imitrex can provide fast relief for a migraine and is also available in nasal spray an injectable for patients having nausea.  If that does not work propranolol may be prescribed.

                                                               Reference

Williams, D., & Fitch, J. (2018). *Online meded quicktables: For repetition & recognition*. (2nd ed.). United States of America.

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[Collapse Subdiscussion](https://king.instructure.com/courses/5942/discussion_topics/35739)[Kimberly Miller](https://king.instructure.com/courses/5942/users/5705)

[**Kimberly Miller**](https://king.instructure.com/courses/5942/users/5705)

Feb 19, 2020Feb 19 at 8:35pm

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Three things I have learned:

* + I learned that Otitis media is a result of Eustachian tube dysfunction which impedes drainage of the middle ear. Also, I learned that while observation is recommended for patients older than 2 years of age with uncertain diagnosis or non-severe illness, patients 6 months to 2yrs. of age with uncertain diagnosis and severe illness need antibiotic treatment. (Week 5 screencast lecture).

* + I learned that ACE inhibitors increase ejection fraction, decreased left-ventricular end-diastolic filling pressures and improved myocardial energy metabolism. Also, I learned that they are not to be used on patients who are pregnant, patients who have bilateral renal artery stenosis, or patients who have history with angioedema. In addition, I learned that they are not the recommended choice for the African American population (Robinson & Woo, pg. 304, 1069).

* 1. Before this class, I had never heard of the Framingham risk score. The FRS is an assessment tool to assess a patient risk of Cardiovascular disease over a ten-year period. This assessment tool has 6 coronary risk factors that include, age, gender, total cholesterol, high density lipoprotein cholesterol, smoking habits and systolic blood pressure (Farhangi, Jahangiry, & Rezaei, 2017).

Two ways I will use what I have learned in practice:

* 1. The knowledge I have learned will be a guide for me to follow when I am treating children for Otitis Media and for patients who have hypertension.
  2. I will able to use the Framingham risk score assessment to determine if my patient is high risk for CVD.

One question I still have:

Upon assessment of a patient who is complaining with signs and symptoms of Otitis media and your findings are that the patient does have an ear infection, should the otoscope specula be changed before examining the other ear?  I have never witnessed a provider changing this during an exam. Also, when treating patients with ear infections when would you prescribe ear drops over po antibiotics?

 Farhangi, M. A., Jahangiry, L., & Rezaei, F. (2017). Framingham risk score for estimation of 10-years of cardiovascular diseases risk in patients with metabolic syndrome. *Journal of Health, Population and Nutrition*, *36*(1). doi: 10.1186/s41043-017-0114-0

Robinson, M., Woo, T. (2016). *Pharmacotherapeutics for advance practice nurse prescribers*. Philadelphia: F.A. Davis Company.

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[Collapse Subdiscussion](https://king.instructure.com/courses/5942/discussion_topics/35739)[Kirsten Applegate-walton](https://king.instructure.com/courses/5942/users/4961)

[**Kirsten Applegate-walton**](https://king.instructure.com/courses/5942/users/4961)

Feb 22, 2020Feb 22 at 4:58pm

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Kimberly,

Wow. I don't believe I have ever seen anyone change the specula to the otoscope either.  That is a pretty interesting question.

According to the NCBI, "The preferred treatment for AOM is high dose amoxicillin, though amoxicillin/clavulanate is an option if the patient has taken amoxicillin within the last 30 days or has shown no improvement after 2 to 3 days of amoxicillin treatment, also, oral cephalosporins, such as cefuroxime, are given for patients with a penicillin allergy" (Mankowski, 2016).

I had a hard time finding whether or not just the tips being changed caused cross contamination, however, the otoscope is pretty dirty according to this article: [https://www.ncbi.nlm.nih.gov/pubmed/23644940 (Links to an external site.)](https://www.ncbi.nlm.nih.gov/pubmed/23644940), check it out!

Kirsten

Mankowski, N. (2016). Figure 2f from: Deltshev C (2016)  Heser stoevi sp. nov., from Turkmenistan (Araneae: Gnaphosidae). Biodiversity Data Journal 4: e10095. https://doi.org/10.3897/BDJ.4.e10095. *Otoscope Exam*. doi: 10.3897/bdj.4.e10095.figure2f

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[Collapse Subdiscussion](https://king.instructure.com/courses/5942/discussion_topics/35739)[Misty Mabe](https://king.instructure.com/courses/5942/users/5601)

[**Misty Mabe**](https://king.instructure.com/courses/5942/users/5601)

Feb 19, 2020Feb 19 at 9:33pm

[Manage Discussion Entry](https://king.instructure.com/courses/5942/discussion_topics/35739)

3 new things I learned regarding a specific drug or class this week:

* + Pediatric patients who cannot control their elevated blood pressure with lifestyle modifications, may be prescribed an ACE inhibitor, angiotensin receptor blockers, long-acting calcium channel blocker, or thiazide(Grygotis, 2017).
  + Acute bronchitis should have symptoms managed and antibiotics should not be routinely prescribed(Albert, 2010).
  + The mnemonic POUND is a tool for diagnosing migraines. P-Pulsatile quality of headache, O-One-day duration (four to 72 hours), U-Unilateral location, N-Nausea or vomiting, D-Disabling intensity(Gilmore & Michael, 2010).

2 things I will change about how I prescribe and/or use the drug or how you will educate patients about the drug:

* + I did not know that pediatric patients could have hypertension. I would closely monitor my pediatric patient’s blood pressure readings. I would keep educating the caregivers and the patient about lifestyle changes and the affects of their decisions. I would prescribe an ACE, CCB, or thiazide if the patient still has issues with an elevated blood pressure.
  + I will educate patients to initially manage the symptoms of acute bronchitis by using antitussives, inhalers in patients with wheeze, inhaled corticosteroids, and home remedies.

1 question I still have about this week’s topics:

* + How would a provider determine if a patient has osteoarthritis or rheumatoid arthritis?

References

Albert, R. H. (2010). *Diagnosis and treatment of acute bronchitis*. Retrieved from American Family Physician: https://www.aafp.org/afp/2010/1201/p1345.pdf

Gilmore, B., & Michael, M. (2010). *Treatment of acute migraine headache*. Retrieved from American Family Physician: https://www.aafp.org/afp/2011/0201/p271.pdf

Grygotis, L. (2017, August 23). Managing high blood pressure in children: a clinical practice guideline. *Clinical Advisor*.

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[Collapse Subdiscussion](https://king.instructure.com/courses/5942/discussion_topics/35739)[Tara Drinnon](https://king.instructure.com/courses/5942/users/5741)

[**Tara Drinnon**](https://king.instructure.com/courses/5942/users/5741)

Feb 20, 2020Feb 20 at 4:39pm

[Manage Discussion Entry](https://king.instructure.com/courses/5942/discussion_topics/35739)

Hi Misty, great question! There a few different ways providers can differentiate osteoarthritis (OA) and rheumatoid arthritis (RA). The onset can be different for the two. OA pain occurs when bone rubs against bone, this type of arthritis pain tends to develop gradually and intermittently over several months or years (Harvard Medical School, 2019). RA, on the other hand, is an inflammatory condition in which your immune system attacks the tissues in your joints. It causes pain and stiffness that worsen over several weeks or a few months and sometimes it begins with "flu-like" symptoms of fatigue, fever, weakness, and minor joint aches (Harvard Medical School, 2019). The location of the pain can also help make providers determine the type of arthritis. Both OA and RA can affect the hands. However, OA often affects the joint closest to the tip of the finger, whereas RA usually spares this joint (Harvard Medical School, 2019). RA also has common early symptoms that include joint pain, stiffness and swelling for more than 6 weeks, swelling affecting 3-4 different joints or more, morning stiffness lasting longer than 30 minutes, symmetrical symptoms affecting both sides of the body, swelling and pain affecting the wrists, hands and finger joints, and rheumatoid nodules developing under the skin (Freeman, 2018). If a patient has these symptoms the provider could refer them to a rheumatologist for further testing. There are blood test that help providers reach a diagnosis for RA, they include rheumatoid factor, anti-Cyclic Citrullinated Peptide (CCP), erythrocyte sedimentation rate (ESR) and C-reactive protein (CRP) (Freeman, 2018). Xray’s, CTs and MRIs may also be ordered. Providers look for signs of joint damage, bone and cartilage erosion as well as narrowing joint spaces that can be signs of RA (Freeman, 2018).

References

Freeman, J. (2018). *RA diagnosis: What criteria are used to diagnose rheumatoid arthritis?* Retrieved from Rheumatoid Arthritis: https://www.rheumatoidarthritis.org

Harvard Medical School. (2019). *Explain the pain – Is it osteoarthritis or rheumatoid arthritis?* Retrieved from Harvard Medical Publishing: https://www.health.harvard.edu

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[Collapse Subdiscussion](https://king.instructure.com/courses/5942/discussion_topics/35739)[Roselee Cathey](https://king.instructure.com/courses/5942/users/5246)

[**Roselee Cathey**](https://king.instructure.com/courses/5942/users/5246)

Feb 23, 2020Feb 23 at 1:47am

[Manage Discussion Entry](https://king.instructure.com/courses/5942/discussion_topics/35739)

Hello Misty,

Excellent question! Rheumatoid arthritis (RA) and osteoarthritis (OA) both affect the joints; however, the different patterns of clinical presentation can lead to a correct diagnosis. For example, OA of the hands affects the distal interphalangeal (DIP) joints typically associated with Heberden nodes (Doherty & Abhishek, 2019). By contrast, RA targets the metacarpophalangeal (MCP) and proximal interphalangeal (PIP) joints, and Herbeden nodes are absent (Doherty & Abhishek, 2019). One of the most characteristic features of RA is the stiffness of the joint, particularly with inactivity, which usually lasts for thirty minutes (e.g., morning stiffness); whereas, joint stiffness associated with AO lasts for only a few minutes ( Doherty & Abhishek, 2019).

While clinical manifestations differ, patients with an extensive history of RA may develop OA (Doherty & Abhishek, 2019). According to Doherty & Abhishek (2019), an MRI may be helpful if there is the uncertainty of diagnosing the cause of joint stiffness. Other diagnostic tests for RA include inflammatory arthritis involving three or more joints, positive rheumatoid factor (RF), elevated levels of C-reactive protein (CRP), and duration of symptoms greater than six weeks (Taylor, 2019).

References:

Doherty, M., & Abhishek, A. (2019). Clinical manifestations and diagnosis of osteoarthritis. In Ramirez (Eds), *UpToDate*. Retrieved February 23, 2020, from https://www-uptodate-com.ezproxy.king.edu

Taylor, P. C. (2019). Biological markers in the diagnosis and assessment of rheumatoid arthritis. In Romain (Eds), *UpToDate*. Retrieved February 23, 2020, from https://www-uptodate-com.ezproxy.king.edu

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[Collapse Subdiscussion](https://king.instructure.com/courses/5942/discussion_topics/35739)[Tara Drinnon](https://king.instructure.com/courses/5942/users/5741)

[**Tara Drinnon**](https://king.instructure.com/courses/5942/users/5741)

Feb 19, 2020Feb 19 at 10:34pm

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-**Three new things you learned regarding a specific drug or class this week.**  
1. I learned that there is a high resistance to azithromycin in this area, and that it is no longer used to treat many common infections.  
2. It is more common for adults to develop viral forms of conjunctivitis and in children bacterial conjunctivitis is more common. Signs that a bacterial cause is more likely is if there is gluing of the eyelids and no itching, and topical antibiotics are used for bacterial conjunctivitis.  
3. Acute bronchitis is treated by antibiotics and symptom management. 90 percent of bronchitis cases are caused by a virus; however, two thirds of bronchitis patients are treated with antibiotics I have learned that patient expectations may lead to antibiotic prescribing. Common therapies include antitussives, expectorants, inhaler medications, and alternative therapies.  
**-Two things you will change about how you prescribe and/or use the drug or how you will educate patients about the drug.**  
1. As always it important to educate patients on the correct use of antibiotics and to not let patient expectations drive you to prescribe antibiotics in situations when they are not indicated.  
2. I will educate patients on the common therapies used to treat bronchitis that do not involve antibiotics. I will also educate patients on the benefits of nonprescription therapies such as echinacea, pelargonium, and honey.  
**-One question you still have about this week’s topics.**  
What is the first step in treating a COPD exacerbation, and at what point would you send the patient to the ER?

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[Collapse Subdiscussion](https://king.instructure.com/courses/5942/discussion_topics/35739)[Kirsten Applegate-walton](https://king.instructure.com/courses/5942/users/4961)

[**Kirsten Applegate-walton**](https://king.instructure.com/courses/5942/users/4961)

Feb 22, 2020Feb 22 at 5:31pm

[Manage Discussion Entry](https://king.instructure.com/courses/5942/discussion_topics/35739)

Tara,

Hey! Great question!

" Treatment of acute exacerbations involves: Oxygen supplementation, Bronchodilators, Corticosteroids, Antibiotics- Sometimes ventilatory assistance" (Wedzicha, 2016).  The article goes on to day, "Mild exacerbations often can be treated on an outpatient basis in patients with adequate home support, however,  elderly, frail patients and patients with comorbidities, a history of respiratory failure, or acute changes in blood gas measurements are admitted to the hospital for observation and treatment" (Wedzicha, 2016).

Wedzicha, W. (2016). What is an Acute Exacerbation of COPD? *Chronic Obstructive Pulmonary Disease*, 192–206. doi: 10.1002/9780470755198.ch15

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[Collapse Subdiscussion](https://king.instructure.com/courses/5942/discussion_topics/35739)[Kimberly Miller](https://king.instructure.com/courses/5942/users/5705)

[**Kimberly Miller**](https://king.instructure.com/courses/5942/users/5705)

Feb 22, 2020Feb 22 at 10:44pm

[Manage Discussion Entry](https://king.instructure.com/courses/5942/discussion_topics/35739)

Hey Tara - That is a great question. I always have such compassion for patients who have this illness. Living in Southwest Virginia, unfortunately, we see Chronic Obstructive Pulmonary Disease frequently. It is important for us as healthcare providers to recognize when patients are having an exacerbation of this disease as this will assist us in treatment in reducing hospitalization rates and promoting positive outcomes. In researching exacerbations of COPD, I gained a better understanding of the treatment required. The Global Initiative for Chronic Obstructive Lung Disease, a report produced by the National Heart, Lung, and Blood Institute and the World Health Organization, defines an exacerbation of COPD as an acute worsening of respiratory symptoms that results in additional therapy (Stoller). Upon evaluation of a patient with COPD, there are cardinal signs to look for, including increased dyspnea, increase in frequency of cough, and increased sputum production with change in color of secretions – all of which can indicate an exacerbation (Stoller). Respiratory infections cause exacerbations of COPD about 70% of the time (Stoller). Having diagnostic testing such as lab work and x-rays can better assist us with determining our treatment intervention.  Initial home management of these infections usually requires antibiotic therapy, oral glucocorticoids, bronchodilator therapy and possibly oxygen therapy (Stoller). When home treatment has failed to improve patient’s health status, they may need to be sent to the hospital for additional testing. I found some guidelines purposed in the GOLD that can assist us in making decisions about sending our patients to the hospital for treatment. Some of these guidelines include if the patient has not been responsive to initial treatment and having increased shortness of breath, if the patient’s oxygen saturation is low, or if they have developed cyanosis. Further evaluation may be required in cases where patients have comorbidities such as cardiac arrhythmia, heart failure, diabetes mellitus, or liver failure as well as situations where peripheral edema develops or if the patient experiences an altered mental status (Stoller).

Stoller, J. K. (2019). Management of exacerbations of chronic obstructive pulmonary disease . ,

1-30. Retrieved from http://www-uptodate-com