

Polypharmacy Project

Bailey Pierce, BSN Student

Morgan Wagner, BSN Student

Sarah Evans, BSN Student

N322 Introduction to Pharmacology

Lakeview College of Nursing

Brittany Lawson MSN, RN, CMAC

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Background: Caroline is a 78-year-old female that resides at home with her son who is her primary caregiver. No one else lives with them. Caroline requires extensive assistance from her son in completing all of her activities of daily living, as she cannot follow simple commands to complete the steps of her activities of daily living. She also is experiencing extensive communicative difficulties resulting in the majority of her communication being word salad. She expresses anger often, and was recently discharged from the local psychiatric hospital related to her physically combative behaviors during care. Caroline smokes a half a pack of cigarettes a day. She has a history of drinking socially, and currently drinks one glass of wine a day at lunch. Caroline denies illicit drug use. Caroline and her daughter have no other family in the area.

Insurance: Caroline has prescription medication insurance only. She does not have insurance for medical visits.

Allergies: Penicillins & Peanuts

Diet: Mechanical Soft with thin liquids related to difficulty chewing

Medical diagnosis: Alzheimer's with behavioral disturbance, COPD, hyperlipidemia, and chronic kidney disease

Current medications include the following:

1. Abilify 7.5 mg by mouth daily
2. Donepezil 10 mg by mouth at bedtime
3. Colace 200 mg by mouth one time a day
4. Haloperidol 2 mg IM every 4 hour PRN
5. Atrovent HFA take 2 inhalations four times a day
6. ProAir HFA take 2 puffs via inhalation four times a day PRN
7. Namenda XR 28 mg by mouth once daily
8. Ibuprofen 400 mg by mouth every 6 hours PRN
9. Lipitor 30 mg by mouth once daily
10. Ativan 1 mg by mouth three times a day

**Drug #1**

**Drug Name (Generic): aripiprazole**

**Drug Name (Trade): Abilify**

**Drug Class: Antipsychotic**

<p><b>How is the medication taken: (include dose, route, and frequency)</b></p>	<p><b>Dose:</b> 7.5 mg</p> <p><b>Route:</b> PO</p> <p><b>Frequency:</b> 1x Daily</p>
<p>Specific Directions not included above:</p>	<p>Take this medication with or without food as directed by the physician (WebMD, n.d.) Do not crush. Take pills whole (Jones &amp; Bartlett Learning, 2019).</p>
<p><b>Does this medication interact with any other medication(s) on this list? (see rubric for further instruction)</b></p>	<p><b>Atrovent HFA (Significant interaction possible, should be monitored by physician)</b></p> <p>Atrovent reduces the absorption of Abilify in the stomach and intestines causing decreased levels of Abilify (WebMD, n.d.). Abilify may increase the effects of Atrovent HFA by additional drug effects (WebMD, n.d.). When taking these medications together there may be increased effects from both drugs including hypoglycemia (WebMD, n.d.).</p> <p><b>Ativan (Potential for interaction)</b></p> <p>Taking Ativan and Abilify together will lead to increased sedation and drowsiness (WebMD, n.d.).</p>

	<p><b>haloperidol (Potential for interaction)</b></p> <p>Taking Abilify and haloperidol together will lead to increased sedation, drowsiness, muscle stiffness, difficulty speaking, difficulty swallowing, restlessness, tremors, and uncontrollable muscle or facial movements (WebMD, n.d.). While unlikely or minor, haloperidol may also increase the level of Abilify by altering the drug’s metabolism</p> <p>Taking Abilify and haloperidol together will lead to increased sedation and drowsiness (WebMD, n.d.).</p> <p><b>ProAir HFA (Potential for interaction)</b></p> <p>These two medications have opposite mechanisms of action. Abilify works to increase sedation and drowsiness, while ProAir HFA decreases sedation and drowsiness (WebMD, n.d.).</p>
<p><b>Lifestyle interactions:</b> <b>(Daily tobacco use, alcohol, drugs, etc. )</b></p>	<p>Should not be taken with alcohol due to increased central nervous system depression (Jones &amp; Bartlett Learning, 2019). Pt has a history of social drinking and currently drinks 1 glass of wine with her lunch.</p>
<p><b>Does any of the client’s past medical history contradict the use of this medication?</b></p>	<p>No contraindications with the patient's past medical history.</p>

<p><b>What is the indication for use of this medication based on the client's past medical history? (If unable to determine an indication based on past medical history, please list potential indications for use of the medication in general)</b></p>	<p>Abilify induces sedation in patients with persistent or severe agitation (National Institute of Health, 2019). This medication should not be used as a treatment for Alzheimer's related psychosis (Jones and Bartlett Learning, 2019).</p>
<p><b>What would you teach the client about taking this medication? You must prioritize 2 (see rubric)</b></p>	<p>1. Educate caregiver (son) to monitor patient closely when administering due to patients difficulty swallowing due to risk of aspiration (Jones &amp; Bartlett Learning, 2019).</p> <p>2. Educate the caregiver on the importance of not consuming alcohol while taking Abilify due to additional CNS depression (Jones &amp; Bartlett Learning Learning, 2019).</p>
<p><b>How much would medication cost per month if paying out of pocket?</b></p>	<p>The out of pocket cost before insurance would be \$420. 35. The patient has insurance so her out of pocket cost should be less (Drugs.com, n.d.-a).</p>

<p><b>Drug #2</b></p>	<p><b>Drug Name (Generic): donepezil</b></p> <p><b>Drug Name (Trade): Aricept</b></p> <p><b>Drug Class: Antidementia</b></p>
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<b>How is the medication taken: (include dose, route, and frequency)</b>	<p><b>Dose:</b> 10 mg</p> <p><b>Route:</b> PO</p> <p><b>Frequency:</b> 1x Daily</p>
<b>Specific Directions not included above:</b>	Take before bed with or without food (Jones & Bartlett Learning, 2019).
<b>Does this medication interact with any other medication(s) on this list? (see rubric for further instruction)</b>	<p><b>Atrovent HFA (potential for interaction)</b></p> <p>Atrovent HFA and donepezil have opposite effects as donepezil has increased additive side effects that lead to blurred vision, increased saliva, increased bowel movements, and increased urination (WebMD, n.d.). Atrovent HFA decreases these effects (WebMD, n.d.). While unlikely or minor, donepezil is an antagonist of Atrovent HFA and can decrease its effects (WebMD, n.d.).</p> <p><b>Haloperidol (Unlikely or minor interaction)</b></p> <p>While interaction is unlikely or minor, haloperidol can alter the drug metabolism of donepezil, increasing its levels and effects (WebMD, n.d.).</p>
<b>Lifestyle interactions:</b>	No contraindications with patients current lifestyle.

<b>(Daily tobacco use, alcohol, drugs, etc. )</b>	
<b>Does any of the client's past medical history contradict the use of this medication?</b>	Patient has COPD. Donepezil can lead to increased bronchoconstriction and secretions.
<b>What is the indication for use of this medication based on the client's past medical history? (If unable to determine an indication based on past medical history, please list potential indications for use of the medication in general)</b>	The patient is taking this medication for treatment of mild to moderate Alzheimer's disease (Jones & Bartlett Learning, 2019).
<b>What would you teach the client about taking this medication? You must prioritize 2 (see rubric)</b>	<p>1.This medication may increase bronchoconstrictors and bronchial secretions (Jones &amp; Bartlett Learning, 2019).</p> <p>2. This medication should be taken at night as it can cause irregular or slow heartbeat (Jones &amp; Bartlett Learning, 2019). When taken at night, the patient is able to sleep through these adverse effects. This patient is hyperactive. I would not recommend she take it during the day.</p>
<b>How much would medication cost per month if paying out of pocket?</b>	The monthly cost of this medication before the patient's insurance would be \$13 (Drugs.com, n.d.-c).
<b>Drug #3</b>	<b>Drug Name (Generic): docusate</b>  <b>Drug Name (Trade): Colace</b>

	<b>Drug Class:Laxative, stool softener</b>
<b>How is the medication taken: (include dose, route, and frequency)</b>	<b>Dose:</b> 200 mg <b>Route:</b> PO <b>Frequency:</b> 1x daily
<b>Specific Directions not included above:</b>	Take with a full glass of milk or water (Jones and Bartlett Learning, 2019).
<b>Does this medication interact with any other medication(s) on this list? (see rubric for further instruction)</b>	No interactions with patients current medications.
<b>Lifestyle interactions: (Daily tobacco use, alcohol, drugs, etc. )</b>	There are no contraindications to taking this medication with the patients current and past lifestyle.
<b>Does any of the client's past medical history contradict the use of this medication?</b>	There are no contraindications related to the patient's past medical history to taking colace.
<b>What is the indication for use of this medication based on the client's past medical history? (If unable to determine an indication based on past medical</b>	The scenario did not say that the patient was taking colace for constipation. I would assess why the patient is taking colace. Laxative abuse is common amongst the elderly.

<b>history, please list potential indications for use of the medication in general)</b>	
<b>What would you teach the client about taking this medication? You must prioritize 2 (see rubric)</b>	<p>1.I would advise the caregiver to monitor his mother for any signs of abdominal pain, nausea, or vomiting and discontinue use of Colace (Jones &amp; Bartlett Learning, 2019).</p> <p>2.I would inform the caregiver that chronic laxative use can lead to constipation.</p>
<b>How much would medication cost per month if paying out of pocket?</b>	The average monthly cost before insurance would be around \$25.21 a month (Drugs.com, n.d.-b).
<b>Drug #4</b>	<p><b>Drug Name (Generic):haloperidol</b></p> <p><b>Drug Name (Trade): Halodol</b></p> <p><b>Drug Class:Antipsychotic</b></p>
<b>How is the medication taken: (include dose, route, and frequency)</b>	<p><b>Dose: 2 mg</b></p> <p><b>Route: Intramuscular (injection)</b></p> <p><b>Frequency: Every 4 hrs as needed</b></p>
<b>Specific Directions not included above:</b>	This medication needs to be given intramuscularly. I would recommend giving in the thigh as it is a large muscle that will rapidly absorb and distribute the medication. The site should be cleaned prior to admission. This injection should be given at a 90 degree angle using the

	Z-track technique (Jones & Bartlett Learning, 2019). I would demonstrate how to properly displace the tissues. Needles should be discarded into a sharps container.
<p><b>Does this medication interact with any other medication(s) on this list? (see rubric for further instruction)</b></p>	<p><b>Abilify (Potential for interaction)</b></p> <p>Taking Abilify and haloperidol together will lead to increased sedation and drowsiness (WebMD, n.d.). Also, while unlikely or minor, haloperidol alters the drug metabolism of Abilify leading to increased levels and effects (WebMD, n.d.)</p> <p><b>Atrovent HFA (significant interaction, should be monitored by doctor)</b></p> <p>Haloperidol increases the effects of Atrovent HFA (WebMD, n.d.). Atrovent HFA, however, reduces the levels of haloperidol by decreasing drug absorption from the stomach and intestines when taken orally (WebMD, n.d.). When used in combination, an increase in effects may lead to hypoglycemia (WebMD, n.d.).</p> <p><b>Ativan (Potential for interaction)</b></p> <p>When taken together, Ativan and haloperidol can lead to an increase in sedation and drowsiness (WebMD, n.d.).</p> <p><b>Haloperidol (Potential for interaction)</b></p>

	<p>Haloperidol and ProAir HFA have opposite effects as haloperidol increases sedation and drowsiness, while ProAir HFA decreases sedation and drowsiness (WedMD, n.d.).</p>
<p><b>Lifestyle interactions:</b> <b>(Daily tobacco use, alcohol, drugs, etc. )</b></p>	<p>This medication should not be taken with alcohol due to also causing CNS depression (Jones and Bartlett Learning, 2019). This medication also causes respiratory depression. The patient smokes ½ a pack of cigarettes a day and has COPD, so her lung function is already compromised (Jones and Bartlett Learning, 2019).</p>
<p><b>Does any of the client’s past medical history contradict the use of this medication?</b></p>	<p>The patient has COPD. This medication can cause respiratory depression. The patient should be monitored for any acute exacerbations such as difficulty breathing and decreased respirations (Jones and Bartlett Learning, 2019).</p>

<p><b>What is the indication for use of this medication based on the client's past medical history? (If unable to determine an indication based on past medical history, please list potential indications for use of the medication in general)</b></p>	<p>This medication is for the patient's episodes of psychosis. It is given on an as needed basis and is prompt acting (Jones &amp; Bartlett Learning, 2019).</p>
<p><b>What would you teach the client about taking this medication? You must prioritize 2 (see rubric)</b></p>	<p>1. Do not take this medication with alcohol due to additional CNS depression (Jones &amp; Bartlett Learning, 2019).</p> <p>2. The best location to give this injection is in the anterior thigh. The book recommends giving in the gluteal muscle, but risks hitting the sciatic nerve (Jones &amp; Bartlett Learning, 2019). I would demonstrate for the caregiver the proper technique.</p>
<p><b>How much would medication cost per month if paying out of pocket?</b></p>	<p>This medication is sold in a 100 mg/mL vial and is \$40 before insurance (Drugs.com, n.d.-d). This would be enough for 50 injections. The patient can receive as many as 6 injections a day or 12 mL total. The monthly cost would be dependent on how many episodes of psychosis the patient experiences</p>
<p><b>Drug # 5</b></p>	<p><b>Drug Name (Generic): Ipratropium Bromide</b></p> <p><b>Drug Name (Trade): Atrovent HFA</b></p> <p><b>Drug Class: Bronchodilator</b></p>

<b>How is the medication taken: (include dose, route, and frequency)</b>	Atrovent HFA is inhaled, two puffs four times daily ( <i>Atrovent HFA (Ipratropium Bromide Inhalation Aerosol): Uses, Dosage, Side Effects, Interactions, Warning, 2020</i> )
<b>Specific Directions not included above:</b>	First time use requires a “prime” spray two puffs away from the face. Additional puffs can be used as needed; however, you should not exceed 12 in 24 hours. ( <i>Atrovent HFA (Ipratropium Bromide Inhalation Aerosol): Uses, Dosage, Side Effects, Interactions, Warning, 2020</i> )
<b>Does this medication interact with any other medication(s) on this list? (see rubric for further instruction)</b>	<p>Abilify (monitor closely)- Atrovent HFA inhalation decreases levels of Abilify oral by opposing drug effects; combination may increase effects of both drugs, possibly low blood sugar (WebMD, n.d.).</p> <p>Haloperidol (monitor closely)- haloperidol oral increases effects of Atrovent HFA inhalation by added drug effects (WebMD, n.d.).</p> <p>Donepezil (monitor closely)- donepezil oral increases and Atrovent HFA inhalation decreases additive side effects that may cause blurred vision, increased saliva, and increased bowel movements and urination (WebMD, n.d.).</p>
<b>Lifestyle interactions: (Daily tobacco use, alcohol, drugs, etc. )</b>	There are no known lifestyle interactions for this drug. ( <i>Albuterol / Ipratropium and Alcohol/Food Interactions, n.d.</i> )

<b>Does any of the client's past medical history contradict the use of this medication?</b>	There are no contraindications from the client's past medical history with this medication. <i>(Albuterol / Ipratropium and Alcohol/Food Interactions, n.d.)</i>
<b>What is the indication for use of this medication based on the client's past medical history? (If unable to determine an indication based on past medical history, please list potential indications for use of the medication in general)</b>	The indication for use of this medication based on the client's past medical history is her diagnosis of COPD. Ipratropium bromide is a bronchodilator that is used for maintenance of COPD bronchospasm. <i>(Atrovent HFA (Ipratropium Bromide Inhalation Aerosol): Uses, Dosage, Side Effects, Interactions, Warning, 2020)</i>
<b>What would you teach the client about taking this medication? You must prioritize 2 (see rubric)</b>	1. Do not use ipratropium bromide to treat acute bronchospasm (Jones and Bartlett Learning, 2019.)  2. Rinse mouth after each nebulizer or inhaler used to minimize dry throat and irritation (Jones and Bartlett Learning, 2019).
<b>How much would medication cost per month if paying out of pocket?</b>	For a 12.9 g inhalation aerosol, it is \$456.18 out of pocket <i>(Atrovent HFA Prices, Coupons and Patient Assistance Programs, n.d.)</i>
<b>Drug # 6</b>	<b>Drug Name (Generic): Albuterol sulfate</b>  <b>Drug Name (Trade): ProAir HFA</b>  <b>Drug Class: Adrenergic Bronchodilator</b>

<b>How is the medication taken: (include dose, route, and frequency)</b>	Inhale two puffs four times daily as needed ( <i>ProAir HFA</i> , 2020)
<b>Specific Directions not included above:</b>	Store this medication away from moisture, heat or cold temperatures.  Use 15-20 minutes prior to exercise to prevent exercise- induced bronchospasm ( <i>ProAir HFA</i> , 2020)
<b>Does this medication interact with any other medication(s) on this list? (see rubric for further instruction)</b>	Abilify (monitor closely)- Abilify oral increases and ProAir HFA inhalation decreases destination and drowsiness (WebMD, n.d.).  Ativan (monitor closely) - Ativan oral increases and ProAir HFA decreases sedation and drowsiness (WebMD, n.d.).  Haloperidol (monitor closely)- Haloperidol oral increases and ProAir HFA inhalation decreases sedation and drowsiness (WebMD, n.d.).  Ibuprofen (monitor closely)- Ibuprofen oral increases and ProAir HFA inhalation decreases potassium levels in the blood
<b>Lifestyle interactions: (Daily tobacco use, alcohol, drugs, etc. )</b>	There are no lifestyle interactions between the client and the medication ( <i>ProAir HFA (Albuterol) Interactions</i> , n.d.)

<p><b>Does any of the client's past medical history contradict the use of this medication?</b></p>	<p>Levalbuterol is excreted by the kidneys in substantial amounts, therefore inhalation of albuterol increases the risk for toxic levels for those with renal dysfunction. (<i>ProAir HFA (Albuterol) Disease Interactions</i>, n.d.)</p>
<p><b>What is the indication for use of this medication based on the client's past medical history? (If unable to determine an indication based on past medical history, please list potential indications for use of the medication in general)</b></p>	<p>This medication is used for treatment and prevention of bronchospasm related to COPD. (<i>ProAir HFA</i>, 2020)</p>
<p><b>What would you teach the client about taking this medication? You must prioritize 2 (see rubric)</b></p>	<ol style="list-style-type: none"> <li>1. Advise patient to wait at least 1 minute between inhalations if additional inhalations required (Jones and Bartlett Learning, 2019).</li> <li>2. Warn the patient not to exceed prescribed dose or frequency. If doses become less effective, tell the patient to contact her prescriber (Jones &amp; Bartlett Learning, 2019).</li> </ol>
<p><b>How much would medication cost per month if paying out of pocket?</b></p>	<p>The cost out of pocket is about \$45 (<i>Albuterol Prices, Coupons and Patient Assistance Programs</i>, n.d.)</p>
<p><b>Drug # 7</b></p>	<p><b>Drug Name (Generic): Memantine hydrochloride extended release</b></p> <p><b>Drug Name (Trade): Namenda XR</b></p>

	<b>Drug Class: NMDA inhibitors</b>
<b>How is the medication taken: (include dose, route, and frequency)</b>	Memantine hydrochloride 28mg by mouth once daily ( <i>Namenda XR (Memantine Hydrochloride Extended Release Capsules): Uses, Dosage, Side Effects, Interactions, Warning, 2019</i> )
<b>Specific Directions not included above:</b>	Can be taken with or without food. Medication must not be chewed or crushed ( <i>Namenda XR (Memantine Hydrochloride Extended Release Capsules): Uses, Dosage, Side Effects, Interactions, Warning, 2019</i> )
<b>Does this medication interact with any other medication(s) on this list? (see rubric for further instruction)</b>	There are no interactions with any medications on the list. (WebMD, n.d.).
<b>Lifestyle interactions: (Daily tobacco use, alcohol, drugs, etc. )</b>	There are currently no lifestyle interactions for the use of memantine hydrochloride. ( <i>Namenda XR (Memantine Hydrochloride Extended Release Capsules): Uses, Dosage, Side Effects, Interactions, Warning, 2019</i> )

<p><b>Does any of the client's past medical history contradict the use of this medication?</b></p>	<p>There aren't any contraindications with the client's past medical history. The only contraindication with this medication is hypersensitivity. (<i>Namenda XR (Memantine Hydrochloride Extended Release Capsules): Uses, Dosage, Side Effects, Interactions, Warning, 2019</i>)</p>
<p><b>What is the indication for use of this medication based on the client's past medical history? (If unable to determine an indication based on past medical history, please list potential indications for use of the medication in general)</b></p>	<p>The indication for the use of this medication based on the client's past medical history is Alzheimer's with behavioral disturbances. Memantine is an indication for treatment of dementia of the Alzheimer's type. (<i>Namenda XR (Memantine Hydrochloride Extended Release Capsules): Uses, Dosage, Side Effects, Interactions, Warning, 2019</i>)</p>
<p><b>What would you teach the client about taking this medication? You must prioritize 2 (see rubric)</b></p>	<ol style="list-style-type: none"> <li>1. Advise patients to avoid a diet excessively high in fruits and vegetables because these foods can alter memantine clearance and increase adverse reactions (Jones &amp; Bartlett Learning, 2019).</li> <li>2. Instruct the patient to take memantine exactly as prescribed. Inform the patient to notify the provider if she fails to take the drug for several days, as dosage adjustments may be required (Jones &amp; Bartlett Learning, 2019).</li> </ol>

<b>How much would medication cost per month if paying out of pocket?</b>	The cost out of pocket for 30 XR capsules are \$112.57 ( <i>Memantine Prices, Coupons and Patient Assistance Programs</i> , n.d.)
<b>Drug # 8</b>	<b>Drug Name (Generic): ibuprofen</b> <b>Drug Name (Trade): Advil, Motrin, Midol IB,</b> <b>Drug Class: NSAID, analgesic, anti-inflammatory, antipyretic</b>
<b>How is the medication taken: (include dose, route, and frequency)</b>	Dose: 400 mg Route: PO Frequency: every 6 hours PRN
<b>Specific Directions not included above:</b>	Give with food to avoid GI tract complications. Take with a full glass of water. If pt needs to take this medication for more than 10 days due to pain, contact the doctor. Wear sunscreen and protective clothing when outdoors (Jones and Bartlett Learning, 2021).
<b>Does this medication interact with any other medication(s) on this list? (see rubric for further instruction)</b>	Ibuprofen and ProAir HFA can interact because ibuprofen raises potassium levels in the blood, while ProAir HFA lowers potassium levels.
<b>Lifestyle interactions: (Daily tobacco use, alcohol, drugs, etc. )</b>	Pt should avoid alcohol while taking ibuprofen (Jones and Bartlett Learning, 2021).

<b>Does any of the client's past medical history contradict the use of this medication?</b>	The patient is 78 years old. Long-term use of oral ibuprofen in the elderly can put the patient at risk for serious GI problems, MI, or stroke (Jones and Bartlett Learning, 2021). In addition, this pt has a history of Chronic Kidney Disease which means she should use extreme caution when taking NSAIDS (Burrows, n.d.).
<b>What is the indication for use of this medication based on the client's past medical history? (If unable to determine an indication based on past medical history, please list potential indications for use of the medication in general)</b>	This patient does not have a direct indication for use. The patient is 78 years old, so one might surmise that she has occasional pain. Chronic kidney disease can cause pain. The patient may be combative because of pain which she is unable to report. Ibuprofen is an analgesic, which will help control pain.
<b>What would you teach the client about taking this medication? You must prioritize 2 (see rubric)</b>	<ol style="list-style-type: none"><li>1. Routinely monitoring potassium levels is very important because there is a narrow range of potassium that is healthy for the human body. If potassium is too low or too high, it can cause dysrhythmias. This is important because taking Ibuprofen and ProAir HFA together can increase the risk of dysrhythmias due to potassium levels.</li><li>2. Taking ibuprofen while using alcohol is dangerous and can increase the risk of GI bleeding. Please seek medical care if you experience abdominal pain or signs of bleeding like black tarry stool and vomit that looks like coffee grounds.</li></ol>

<b>How much would medication cost per month if paying out of pocket?</b>	This is a PRN medication. Therefore, the cost will depend on how often the patient takes it. One small bottle of Ibuprofen has 20 doses and costs \$9.54. Hopefully, 20 doses would be plenty for a month.
<b>Drug # 9</b>	<b>Drug Name (Generic): atorvastatin calcium</b> <b>Drug Name (Trade): Lipitor</b> <b>Drug Class: HGM-Coa reductase inhibitor, Antihyperlipidemic</b>
<b>How is the medication taken: (include dose, route, and frequency)</b>	<b>Dose:</b> 30 mg <b>Route:</b> PO <b>Frequency:</b> 1x daily
<b>Specific Directions not included above:</b>	Please take this medication at the same time every day. It is ok to take it with or without food.
<b>Does this medication interact with any other medication(s) on this list? (see rubric for further instruction)</b>	No interactions with patients current medications.
<b>Lifestyle interactions: (Daily tobacco use, alcohol, drugs, etc. )</b>	Smoking lowers the effectiveness of atorvastatin (Milionis, 2001). Drinking one glass of wine per day is ok with atorvastatin, but patients should not use alcohol in excess (Jones and Bartlett Learning, 2021).
<b>Does any of the client's past medical history contradict the use of this medication?</b>	There are no contraindications related to the patient's past medical history to taking atorvastatin.

<p><b>What is the indication for use of this medication based on the client's past medical history? (If unable to determine an indication based on past medical history, please list potential indications for use of the medication in general)</b></p>	<p>This patient has a history of hyperlipidemia. This is the reason she is taking atorvastatin.</p>
<p><b>What would you teach the client about taking this medication? You must prioritize 2 (see rubric)</b></p>	<ol style="list-style-type: none"> <li>1. Atorvastatin is meant to be used in combination with a low cholesterol diet. This medication is not a substitute for a low cholesterol diet.</li> <li>2. Smoking cessation would be in the client's best interest because it would increase the effectiveness of this medication.</li> </ol>
<p><b>How much would medication cost per month if paying out of pocket?</b></p>	<p>This patient takes 30 mg of Lipitor daily. The available tablets that I can find come in 10, 20, 40, and 80 mg. A 30 day supply of 20 mg tablets costs \$255.25. My patient would need 1.5 tablets per day, so she will need 45 tablets per month. The extra 15 tablets would cost roughly \$112.60. The total cost of this prescription would be \$480.50</p>
<p><b>Drug # 10</b></p>	<p><b>Drug Name (Generic): lorazepam</b></p> <p><b>Drug Name (Trade): Ativan</b></p> <p><b>Drug Class: Benzodiazepine, Anxiolytic, Controlled substance schedule IV.</b></p>
<p><b>How is the medication taken: (include dose, route, and frequency)</b></p>	<p><b>Dose:</b> 1 mg</p> <p><b>Route:</b> PO</p> <p><b>Frequency:</b> TID</p>

<b>Specific Directions not included above:</b>	May take with or without food.
<b>Does this medication interact with any other medication(s) on this list? (see rubric for further instruction)</b>	<p><b>Abilify (Potential for interaction)</b></p> <p>Ativan and Abilify both cause drowsiness and sedation (WebMD, n.d.). Using them together can increase this effect.</p> <p><b>Haloperidol (Potential for interaction)</b></p> <p>Ativan and Haloperidol both cause drowsiness and sedation (WebMD, n.d.). Using them together can increase this effect.</p> <p><b>ProAir HFA (Potential for interaction)</b></p> <p>Ativan can cause drowsiness and sedation, while Pro Air HFA decreases drowsiness (WebMD, n.d.).</p>
<b>Lifestyle interactions:</b> <b>(Daily tobacco use, alcohol, drugs, etc. )</b>	Alcohol use can increase the sedative effects of lorazepam which can cause respiratory depression.
<b>Does any of the client's past medical history contradict the use of this medication?</b>	There are no contraindications related to the patient's past medical history to taking ativan.
<b>What is the indication for use of this medication based on the client's past medical history? (If unable</b>	This drug is used to treat anxiety. The patient's history does not directly indicate anxiety, but it does indicate agitation, which is often treated with lorazepam.

<p><b>to determine an indication based on past medical history, please list potential indications for use of the medication in general)</b></p>	
<p><b>What would you teach the client about taking this medication? You must prioritize 2 (see rubric)</b></p>	<ol style="list-style-type: none"> <li>1. This drug can increase the risk of suicide. Taking an antidepressant while taking lorazepam can help with this side effect (Jones and Bartlett Learning, 2021). The patient is not currently taking an antidepressant. Instruct the patient to seek immediate medical care if suicidal ideations occur.</li> <li>2. Lorazepam can cause respiratory depression. It is essential to monitor the patient's breathing continuously while using lorazepam. Using alcohol at the same time as lorazepam can increase respiratory depression (Jones and Bartlett Learning, 2021).</li> </ol>
<p><b>How much would medication cost per month if paying out of pocket?</b></p>	<p>A 30 day, 90 tablet supply of 1 mg of lorazepam costs \$19.33</p>

**Is there anything about this medication regimen scenario that might indicate a potential difficulty in maintaining compliance with the orders as listed?**

The patient is experiencing difficulty chewing, which requires her to have mechanical soft food. A speech-language pathologist should be consulted to assess the patient's ability to swallow pills whole. If the patient cannot swallow medications whole, they can be crushed and given with applesauce. The patient is not able to communicate clearly. Therefore, she will not be able to indicate possible adverse side effects. The patient's son is her caregiver. He may need support to care for his mother, take her to necessary appointments, and avoid caregiver fatigue. Case management should assess for necessary social and caregiving support. The price of all of the prescriptions may be unmanageable for this family. The patient has prescription insurance, but her insurance does not cover medical visits. Therefore, maintaining the prescription regimen will require periodic doctor visits. The patient may need different insurance coverage to make this possible. Under the affordable cares act, she will qualify for insurance that will cover doctor visits.

**Is there anything about this medication regimen scenario that might assist the client in maintaining the medication regimen as ordered?**

The patient is not able to care for herself. She cannot perform any of her activities of daily living or communicate clearly. Therefore, she depends entirely on her son. She will need him to be a good advocate and excellent caregiver to maintain this

medication regimen. Some of the medications she needs are given four times per day. Managing her medications will require organization and skill. If her son is not capable of this, he may require the assistance of a home health nurse. The help of a visiting nurse could take a lot of pressure off of the son and make his caregiving role less burdensome. A home health nurse could prepare the medications for administration. This could help prevent medication errors.

**What suggestions might you make to the prescriber and/or client (or questions you might ask the prescriber) to help this client scenario? (think about decreasing the potential for interaction(s) through medication reduction, other potential medications, diet changes, lifestyle changes, etc), or lab values that need monitored”**

The patient should be aware that quite a few of the medications that she is taking may cause drowsiness, for example Ativan and Abilify. The patient should take these medications that can cause drowsiness at night. In addition to drowsiness, the medications that our patient is taking can be hard on the kidneys, such as ibuprofen and levalbuterol. It is best to take these medications without alcohol, and to monitor alcohol consumption while taking these medications.

**Reflective Statement of Experience:** This project as a whole taught us how any patient can struggle when dealing with polypharmacy and the overwhelming prices of medications. A patient can be on medications that interact with each other without even knowing it, or interact with the patient’s medical history. As nurses, we must ensure our patient’s safety by collecting information on all of the medications the patient is currently taking, assessing for drug to drug interactions, and eliminating any duplicate

medications. By reviewing dosages, interactions with different medications, and contraindications for a particular medication, we can provide safety for our patients.

**What would the patients monthly out of pocket expense for all 10 medications? (Total Cost for all 10 meds)?**

Abilify- \$420

Donepezil- \$13

Colace 200-\$25.21

Haloperidol-\$40

Atrovent HFA-\$456.18

ProAir HFA- \$45

Namenda XR-\$112.57

Ibuprofen-\$9.54

Lipitor-\$480.50

Ativan-\$19.33

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Before insurance, our patient would expect to pay \$1,621.53. The patient does have prescription drug insurance so her out of pocket should be less.

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### N322 Polypharmacy Grading Rubric

<b>Criteria</b>	<b>Excellent 40 points</b>	<b>Acceptable 31-39 points</b>	<b>Unacceptable 0-30 points</b>	<b>Points Earned</b>
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<p>Each drug should have a completed breakdown within the tables provided, which includes the following:</p> <ul style="list-style-type: none"> <li>• Drug class</li> <li>• Generic name</li> <li>• Trade name</li> <li>• How is the medication taken (include dose, route, frequency)</li> </ul>	<p>All key components were addressed within the paper and were accurate.</p>	<p>The student provided the required information for some of the medications, but not all and/or the answers provided were inaccurate. (Each individual component for each medication is worth one point)</p>	<p>The student failed to address a sufficient number of the listed components within the paper and/or the components were addressed but were inaccurate. (Each individual component for each medication is worth one point)</p>	<p>___/40</p>
<p><b>Criteria</b></p>	<p><b>Excellent 10 points</b></p>	<p><b>Acceptable 8-10 points</b></p>	<p><b>Unacceptable 0 - 7 points</b></p>	<p><b>Points Earned</b></p>
<p>Specific Directions not included above:</p> <ul style="list-style-type: none"> <li>• Is there any type of medication on the patient list that have specific directions?</li> </ul> <p>(before bed, before breakfast, 30 minutes before meals, etc..)</p>	<p>All key components were addressed within the paper.</p>	<p>The student did list some of the medications that required specific directions, however some of the medications included specific directions that were not addressed and/or were inaccurate. (For each medication this question if worth one point)</p>	<p>Student failed to answer the questions and/or the answers were inaccurate. (For each medication this question is worth one point)</p>	<p>___/10</p>
<p><b>Criteria</b></p>	<p><b>Excellent 0 points</b></p>	<p><b>Acceptable 16-19</b></p>	<p><b>Unacceptable 0-15 points</b></p>	<p><b>Points Earned</b></p>

<p>Does this medication have any potentially serious interactions with any other medication(s) on this list, and/or potential interactions that should be closely monitored due to co-administration?</p> <ul style="list-style-type: none"> <li>Do any of the medications interact with each other?</li> </ul> <p>(Please note: if there is an interaction between two medication, you MUST list that interaction on BOTH medications to receive full credit. You may utilize the same verbiage/wording on each medication, we want to know you are thinking about it when considering each medication)</p>	<p>All medications reviewed and student explained medication interactions.</p>	<p>The student did list some of the potential interactions of the medication(s), but failed to address all potential interactions that are serious and/or need close monitoring. (for each medication listed this question is worth two points)</p>	<p>Student failed to answer question and/or The student did list some of the potential interactions of the medication(s), but failed to address all potential interactions that are serious and/or need close monitoring. (for each medication listed this question is worth two points)</p>	<p>___/20</p>
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Criteria	Excellent 5 points	Acceptable 4 points	Unacceptable 0 -3 points	Points Earned
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<p>Lifestyle interactions:</p> <ul style="list-style-type: none"> <li>• What lifestyle factors counteract with the medications?</li> </ul> <p>(tobacco user, ETOH use – 3 beers daily)</p>	<p>Student showed knowledge why lifestyle would counteract with medications</p>	<p>The student listed lifestyle interactions for some of the medications, but not all and/or the interactions listed were not priority or were incorrect. (For each medication, this question is worth half a point)</p>	<p>Student failed to answer question or the student listed lifestyle interactions for some of the medications, but not all and/or the interactions listed were not priority or were incorrect. (For each medication, this question is worth half a point)</p>	<p>___/5</p>
<p><b>Criteria</b></p>	<p><b>Excellent 10 points</b></p>	<p><b>Average 8-9</b></p>	<p><b>Unacceptable 0-7 points</b></p>	<p><b>Points Earned</b></p>
<ul style="list-style-type: none"> <li>• Does any of the client’s past medical history contradict the use of this medication?</li> </ul>	<p>Student showed knowledge why the client’s past medical history would contradict the use of the medication(s).</p>	<p>Student provided answers to the question(s), but failed to answer all the questions and/or the answers provided were inaccurate. (For each medication this question is worth one point)</p>	<p>Student failed to answer question or Student provided answers to the question(s), but failed to answer all the questions and/or the answers provided were inaccurate. (For each medication this question is worth one point)</p>	<p>___/10</p>
<p><b>Criteria</b></p>	<p><b>Excellent 10 points</b></p>	<p><b>Acceptable 8-9 points</b></p>	<p><b>Unacceptable 0-7 points</b></p>	<p><b>Points Earned</b></p>

<ul style="list-style-type: none"> <li>What is the indication for use of this medication based on the client's past medical history? (If unable to determine an indication based on past medical history, please list potential indications for use of the medication in general)</li> </ul>	<p>Student showed knowledge of medications and what conditions corresponds with medications</p>	<p>The student provided appropriate indications for some of the medications, but failed to capture all of the appropriate indications for use. (For each medication this question is worth one point)</p>	<p>Student failed to answer the question or The student provided appropriate indications for some of the medications, but failed to capture all of the appropriate indications for use. (For each medication this question is worth one point)</p>	<p>___/10</p>
<p><b>Criteria</b></p>	<p><b>Excellent 20 points</b></p>	<p><b>Acceptable 16-19 points</b></p>	<p><b>Unacceptable 0-15 points</b></p>	<p><b>Points Earned</b></p>
<p>What would you teach the client about taking this medication?</p> <ul style="list-style-type: none"> <li>What education is needed for the medication? (For each medication listed the student must prioritize two topics for client education)</li> </ul> <p>(You must consider all component(s) of the medication list when answering this question... if there are potential</p>	<p>Student showed the importance of medication education, and appropriate prioritized client education for the scenario provided.</p>	<p>The student provided some appropriate education for the client, but failed to capture all of the appropriately prioritized education for the client. (Each topic of education is worth one point)</p>	<p>Student failed to answer the question OR The student provided some appropriate education for the client, but failed to capture all of the appropriately prioritized education for the client. (Each topic of education is worth one point)</p>	<p>___/20</p>

<p>interactions with other medication this may be a priority over general education for this one medication)</p>				
Criteria	Excellent 10 points	Acceptable 8-9 points	Unacceptable 0-7 points	Points Earned
<p>Is there anything about this medication regimen/ scenario that might indicate a potential difficulty in maintaining compliance with the orders as listed?</p> <ul style="list-style-type: none"> <li>• Why would the patient have difficulty maintaining the medication regimen?</li> </ul> <p>(Please consider all factors in the scenario and all information provided within your chart – including cost, insurance, frequency of administration, etc)</p>	<p>Student had knowledge on why a patient would have difficulty with medication regiment</p>	<p>The student indicated some potential reasons that the client may have difficulty, however the student failed to indicate a reason OR an appropriate reason for some of the medications (This question is worth one point for each medication)</p>	<p>Student failed to answer the question OR the student indicated some potential reasons that the client may have difficulty, however the student failed to indicate a reason OR an appropriate reason for some of the medications (This question is worth one point for each medication)</p>	<p>___/10</p>
Criteria	Excellent 10 points	Acceptable 8-9 points	Unacceptable 0-7 points	Points Earned
<p>Is there anything about this medication regimen/ scenario that might assist the client in maintaining the medication regimen as ordered?</p>	<p>Student had knowledge on medication compliance</p>	<p>The student answered the question appropriately for some of the medications but failed to indicate all of the factors that are present that assist with compliance. (This</p>	<p>Student failed to answer the question OR The student answered the question appropriately for some of the medications but failed to indicate all of the factors that are present that assist with</p>	<p>___/10</p>

<ul style="list-style-type: none"> <li>• What factors are present to remain compliant?</li> </ul> <p>(Please consider all factors in the scenario and all information provided within your chart – including cost, insurance, frequency of administration, etc.</p>		question is worth one point for each medication)	compliance. (This question is worth one point for each medication)	
<p><b>Criteria</b></p>	<p><b>Excellent 10 points</b></p>	<p><b>Acceptable 8-9 points</b></p>	<p><b>Unacceptable 0 points</b></p>	<p><b>Points Earned</b></p>
<ul style="list-style-type: none"> <li>• How much would this medication cost per month if the patient were to pay for them out of pocket? (best assessment based off of research)</li> <li>• What would the client’s monthly out of pocket expense for all 10 medications?</li> </ul>	Student showed research on medication costs	The student provided accurate research for some of the medications, but failed to provided research for all medications (This question is worth one point for each medication, with the total cost being worth 5 points)	Student failed to answer the question OR The student provided accurate research for some of the medications, but failed to provided research for all medications (This question is worth one point for each medication, with the total cost being worth 5 points)	<p>___/15</p>
<p><b>Criteria</b></p>	<p><b>Excellent 20 points</b></p>	<p><b>Acceptable 16-19 points</b></p>	<p><b>Unacceptable 0-15 points</b></p>	<p><b>Points Earned</b></p>
The student must appropriately format the paper and include all of the following:	The document included a title page, the rubric, the client scenario, a reference page which included five references that were	The document did not meet all of the criteria for formatting/ referencing. See	The document did not meet all of the criteria for formatting/ referencing. See “criteria” to the left for further breakdown.	<p>___/20</p>

<ul style="list-style-type: none"> <li>• Entire document must include appropriate citations, reference page, title page, page numbers, running head, all with appropriate formatting per APA (10 points – each missing or inaccurate portion per APA is worth one point)</li> <li>• The student provided a rubric attached for grading (3 points)</li> <li>• The student included the provided client scenario on page two of the document (2 points)</li> <li>• The paper included a minimum of five references which were cited within the document (each reference with one citation is worth 5 points)</li> </ul>	<p>cited within the document. APA formatting was consistent with the APA manual.</p>	<p>“criteria” to the left for further breakdown.</p>		
<p><b>Criteria</b></p>	<p><b>Excellent</b></p>	<p><b>Acceptable</b></p>	<p><b>Unacceptable</b></p>	<p><b>Points</b></p>

	20 points	16-19 points	0-15 points	Earned
<p>What suggestions might you make to the prescriber and/or client (or questions you might ask the prescriber) to help this client scenario? (think about decreasing the potential for interaction(s) through medication reduction, other potential medications, diet changes, lifestyle changes, etc)</p> <p>Elaborate on this, explaining why you feel it should be addressed, why it is priority and provide evidence behind your presentation.</p>	<p>The student was able to identify one potential idea or question to present to the prescriber or client. This question showed evidence of good critical thinking.</p>	<p>The student was able to identify one potential idea or question to present to the prescriber or client, however there was a much higher priority question/suggestion/issue within the scenario that should have been addressed.</p>	<p>The student failed to answer the question OR the student answered the question, however the students answer was dangerously inaccurate.</p>	<p>___/20</p>
Criteria	Excellent 10 points	Acceptable 8-9 points	Unacceptable 0-7 points	Points Earned
<ul style="list-style-type: none"> <li>Reflective statement of experience should include the following:           <ul style="list-style-type: none"> <li>-insight into the project itself (a specific example within the project and its implications)</li> <li>-A basic understanding of polypharmacy</li> </ul> </li> </ul>	<p>The students provided reflection showed good insight into the project itself, polypharmacy, and the nurses role in client advocacy</p>	<p>The student provided a reflection, however the reflection lacked one of the following</p> <ul style="list-style-type: none"> <li>-insight into the project itself (a specific example within the project and its implications).</li> <li>-A basic understanding of polypharmacy</li> </ul>	<p>Student failed to reflect on their project OR the student addressed only of the topics of reflection</p>	<p>___/10</p>

-A reflection on this student nurses role in this scenario as a client advocate/educator/caregiver		-A reflection on this student nurses role in this scenario as a client advocate/educator/caregiver		
<b>Total Points</b>				___/200