

Polypharmacy Project

Bryson Cutts

N322 Basic Concepts of Pharmacology

Lakeview College of Nursing

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**Polypharmacy Case 5**

**Patient:** Lucy is a 68-year-old female, who lives at home with daughter. She smokes 1 pack a day of cigarettes and has for 36 years. Lucy has anxiety and has been having increased difficulty sleeping lately. She has an extensive past medical history. She was recently hospitalized and diagnosed with community acquired pneumonia.

**Medical hx:** hypertension, insomnia, sleep apnea (using C-pap but non-compliant), chronic obstructive pulmonary disease, arthritis, uses oxygen @ 2L nasal cannula

**Wt:** 300 lb **Ht:** 5'2"

**Allergies:** Seasonal

**Medications:**

Hydrochlorothiazide 50 mg by mouth twice daily

Simvastatin 40 mg by mouth at night

Prednisone 10 mg tablets tapering dose by mouth (end in 7 days)

Days 1 and 2: 6 tablets, Days 3 and 4: 5 tablets, Days 5 and 6: 4 tablets

Days 7 and 8: 3 tablets, Days 9 and 10: 2 tablets, Days 11 and 12: 1 tablet

Budesonide 160/4.5 mcg 2 puffs via inhalations BID

Meloxicam 15 mg by mouth once a day

Zolpidem 10mg by mouth at bedtime

Ciprofloxacin 750mg every 12 hours by mouth (end in 7 days)

Cheratussin 1tsp every 4 hours by mouth as needed

Tylenol #3 (30-300) take one tablet by mouth every 4 to 6 hours PRN for pain

Albuterol sulfate 2.5 mg nebulization every 4 to 6 hours as needed

<p><b>Drug #1</b></p> <p><b>Pharmacological Drug Class: Thiazide diuretic</b></p> <p><b>Therapeutic Drug Class: Diuretic</b></p>	<p><b>Drug Name (Generic): hydrochlorothiazide</b></p> <p><b>Drug Name (Trade): Microzide</b></p>
<p><b>How is the medication taken: (include dose, route, and frequency)</b></p>	<p><b>This is medication is consumed orally two times a day at 50 mg per dose.</b></p>
<p><b>Specific Directions not included above:</b></p>	<p><b>This medication should not be taken close to bedtime due to potential nocturia (Jones &amp; Bartlett, 2020).</b></p>
<p><b>Does this medication interact with any other medication(s) on this list? (see rubric for further instruction)</b></p>	<p><b>Meloxicam can interact with this medication and reduce the diuretic function; it can cause renal failure (Jones &amp; Bartlett Learning, 2020).</b></p> <p><b>Prednisone can interact with this medication causing a reduction in diuresis and potassium levels (Jones &amp; Bartlett Learning, 2020).</b></p> <p><b>Budesonide-formoterol fumarate can interact with this medication and cause hypokalemia alongside other electrolyte insufficiencies (Jones &amp; Bartlett Learning, 2020).</b></p> <p><b>Acetaminophen-codeine can interact with this medication and increase hypotensive effects of the diuretic (Jones &amp; Bartlett Learning, 2020).</b></p>
<p><b>Lifestyle interactions:</b></p>	<p><b>Alcohol can cause orthostatic hypertension (Jones &amp; Bartlett Learning, 2020).</b></p>

<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>	<b>No, the client's past medical history does not contradict the use of this medication (Jones &amp; Bartlett Learning, 2020).</b>
<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>	<b>The client's hypertension is the indication for taking this medication because diuresis will help with lowering blood pressure by reducing blood volume (Jones &amp; Bartlett Learning, 2020).</b>
<b>What would you teach the client about taking this medication?</b>	<b>I would instruct the client to report signs and symptoms of co-administration medication interactions: meloxicam can cause urinary retention, prednisone and budesonide-formoterol fumarate can cause hypokalemia resulting in cardiac dysrhythmias (Jones &amp; Bartlett Learning, 2020). Also, I would instruct her to report dizziness with sudden position changes due to orthostatic hypotension caused by acetaminophen-codeine. I would advise the client to avoid taking the medication at night to avoid nocturia. I would advise the client to consume food with the medication to avoid GI upset (Jones &amp; Bartlett Learning, 2020). I would instruct the client to keep track of her weight and contact her primary care provider if she gains more than two pounds in</b>

	<b>one day (Jones &amp; Bartlett Learning, 2020). I would instruct the client to consume foods with a high amount of potassium (Jones &amp; Bartlett Learning, 2020). I would instruct the client to inform a healthcare team member about a reduction in output (Jones &amp; Bartlett Learning, 2020).</b>
<b>How much would medication cost per month if paying out of pocket?</b>	<b>50 mg per tablet at 60 tablets per bottle of hydrochlorothiazide equates to \$8.00 per month (WellRx, 2020)</b>

<b>Drug #2</b>	<b>Drug Name (Generic): simvastatin</b>
<b>Pharmacological Drug Class: HMG-CoA reductase inhibitor</b>	<b>Drug Name (Trade): Zocor</b>
<b>Therapeutic Drug Class: Antilipemic</b>	
<b>How is the medication taken: (include dose, route, and frequency)</b>	<b>This medication is consumed orally at 40 mg per dose at night.</b>
<b>Specific Directions not included above:</b>	<b>This medication is listed to be taken at night because it lowers cholesterol; cholesterol is synthesized at night (Jones &amp; Bartlett Learning, 2020).</b>

<p><b>Does this medication interact with any other medication(s) on this list? (see rubric for further instruction)</b></p>	<p><b>Prednisone can interact with this medication and cause acute renal failure (Jones &amp; Bartlett Learning, 2020).</b></p>
<p><b>Lifestyle interactions: (Daily tobacco use, alcohol, drugs, etc.)</b></p>	<p><b>It is not listed; however, grapefruit juice should be avoided due to the risk of myopathy and rhabdomyolysis (Jones &amp; Bartlett Learning, 2020).</b></p>
<p><b>Does any of the client's past medical history contradict the use of this medication?</b></p>	<p><b>No, the client's past medical history does not contradict this medication (Jones &amp; Bartlett Learning, 2020).</b></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><b>The client is a 36-year 1 pack-per-day smoker who is morbidly obese and has hypertension; she is taking this medication to reduced LDL and triglyceride levels (Jones &amp; Bartlett Learning, 2020). These are evidently elevated due to her poor lifestyle decisions regarding diet, smoking, and potentially exercise.</b></p>
<p><b>What would you teach the client about taking this medication?</b></p>	<p><b>I would instruct the client to report symptoms of acute renal failure potentiated by prednisone: urinary retention, fatigue, dependent edema, worsened hypertension, dyspnea, and confusion (Jones &amp; Bartlett Learning, 2020). I would instruct her to take this medication at night. I would instruct her to consume foods low in saturated fats and cholesterol (Jones &amp; Bartlett Learning, 2020). I would instruct her to report signs of</b></p>

	<p>jaundice such as yellow eyes and skin and dark urine. I would advise against grapefruit juice to avoid drug toxicity (Jones &amp; Bartlett Learning, 2020). I would instruct the client to report confusion to the provider. If the dose is doubled to 80 mg, notify the patient about myopathic risks such as aches, pain, and tenderness (Jones &amp; Bartlett Learning, 2020).</p>
<p>How much would medication cost per month if paying out of pocket?</p>	<p>40 mg per tablet at 30 tablets per bottle of simvastatin equates to \$9.00 per month (WellRx, 2020).</p>

<p><b>Drug #3</b></p> <p><b>Pharmacological Drug Class: Glucocorticoid</b></p> <p><b>Therapeutic Drug Class: Immunosuppressant</b></p>	<p><b>Drug Name (Generic): prednisone</b></p> <p><b>Drug Name (Trade): Deltasone</b></p>
<p><b>How is the medication taken: (include dose, route,</b></p>	<p><b>This medication is consumed orally at 10 mg per tablet and is tapered over 12 days. The</b></p>

and frequency)	initial dose requires 6 tablets (60 mg) for the first two days. Then, the succeeding days in groups of two (3 & 4, 5 & 6, 7 & 8, 9 & 10, 11 & 12) will require the dose to be tapered by 1 less tablet per paired days ending with 1 tablet on the final pair.
Specific Directions not included above:	This medication should be taken in the morning to enhance its cortisone-mimicking effect (Jones & Bartlett, 2020).
Does this medication interact with any other medication(s) on this list? (see rubric for further instruction)	<p>Acetaminophen-codeine can interact with this medication and cause hepatotoxicity if this former medication is used for a long-time and/or in great quantity (Jones &amp; Bartlett Learning, 2020).</p> <p>Hydrochlorothiazide can interact with medication causing a reduction in diuresis and potassium levels (Jones &amp; Bartlett Learning, 2020).</p> <p>Simvastatin can interact with this medication and cause acute renal failure (Jones &amp; Bartlett Learning, 2020).</p> <p>Meloxicam can interact with this medication and reduce the diuretic function; it can cause renal failure (Jones &amp; Bartlett Learning, 2020).</p>
Lifestyle interactions: (Daily tobacco use, alcohol, drugs, etc.)	<p>It is not listed; however, sodium-containing foods can cause edema and exacerbate the client's hypertension (Jones &amp; Bartlett Learning, 2020).</p> <p>Alcohol is not listed either, but it can cause GI bleeding through ulceration (Jones &amp;</p>

	<b>Bartlett Learning, 2020).</b>
<b>Does any of the client's past medical history contradict the use of this medication?</b>	<b>No, the client's past medical history does not contradict this medication (Jones &amp; Bartlett Learning, 2020).</b>
<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><b>The client's arthritis is an inflammatory condition, and this medication suppresses inflammatory responses and reduces the pain, edema, erythema, and pruritis that come with the condition (Prednisone, 2018).</b></p> <p><b>The client's COPD is also treated with this anti-inflammatory steroid, which reduces potential bronchospasms (Prednisone, 2018).</b></p>
<b>What would you teach the client about taking this medication?</b>	<b>I would instruct the client to report signs and symptoms of current medication interactions. Acetaminophen-codeine can cause liver damage, so report jaundice-like characteristics (Jones &amp; Bartlett Learning, 2020). Hydrochlorothiazide can cause decreased diuresis, so report urinary retention and worsening hypertension; hypokalemic cardiac dysrhythmias should be reported (Jones &amp; Bartlett Learning, 2020). Simvastatin can cause renal failure so report urinary retention, fatigue, dependent edema, worsened hypertension, dyspnea, and confusion (Jones &amp; Bartlett Learning, 2020). Meloxicam can also cause renal failure and diuretic reduction signs</b>

	<p>and symptoms mentioned above (Jones &amp; Bartlett Learning, 2020). I would instruct her to consume food with this medication to ensure no GI upset. I would instruct her to gradually decrease dose as prescribed. I would instruct the patient to not consume alcohol with the medication to prevent GI bleeding and ulcers (Jones &amp; Bartlett Learning, 2020). I would instruct the client to report arthritic joint pain and edema right away to her provider (Jones &amp; Bartlett Learning, 2020).</p>
<p>How much would medication cost per month if paying out of pocket?</p>	<p>10 mg per tablet at 42 tablets per bottle of prednisone equates to \$17.04 per month (WellRx, 2020).</p>

<p><b>Drug #4</b></p> <p><b>Pharmacological Drug Class: Corticosteroid</b></p> <p><b>Therapeutic Drug Class: Anti-asthmatic, anti-inflammatory</b></p>	<p><b>Drug Name (Generic): budesonide-formoterol fumarate</b></p> <p><b>Drug Name (Trade): Symbicort</b></p>
<p><b>How is the medication taken: (include dose, route,</b></p>	<p><b>This medication is orally inhaled two times a day at 160/4.5 mcg per 2 puffs.</b></p>

<b>and frequency)</b>	
<b>Specific Directions not included above:</b>	<b>This medication should involve a rinse-and-spit after the second puff (Jones &amp; Bartlett, 2020).</b>
<b>Does this medication interact with any other medication(s) on this list? (see rubric for further instruction)</b>	<b>Hydrochlorothiazide can interact with this medication and cause hypokalemia alongside other electrolyte insufficiencies (Jones &amp; Bartlett Learning, 2020).</b>
<b>Lifestyle interactions: (Daily tobacco use, alcohol, drugs, etc.)</b>	<b>It is not listed; however, grapefruit juice should not be consumed while taking this medication because it can increase serum levels of said medication. If drug toxicity occurs, adverse effects including adrenal insufficiency, pancreatitis, bronchospasm, and anaphylaxis can occur (Jones &amp; Bartlett Learning, 2020).</b>
<b>Does any of the client's past medical history contradict the use of this medication?</b>	<b>No, the client's past medical history does not contradict this medication (Jones &amp; Bartlett Learning, 2020).</b>
<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>	<b>The client's seasonal allergies cause rhinitis, and this medication is used for treatment by inhibiting the inflammatory mediators, reducing mucous thickness and quantity (Jones &amp; Bartlett Learning, 2020).</b>

<b>What would you teach the client about taking this medication?</b>	<b>I would instruct the client to report hydrochlorothiazide medication interaction signs and symptoms of electrolyte imbalances such as dysrhythmias, nausea, vomiting, muscle weakness or cramps, and numbness and tingling (Jones &amp; Bartlett Learning, 2020). I would instruct her to avoid grapefruit juice because it can cause adrenal insufficiency, pancreatitis, bronchospasm, and anaphylaxis (Jones &amp; Bartlett Learning, 2020). I would instruct her to shake the inhaler before using it and to not use a spacer (Jones &amp; Bartlett Learning, 2020). Orally, I would instruct her to rinse and spit after inhalation. I would instruct her not use this medication as a rescue medication. If she is taking a nasal spray, I would instruct her to close the nostril without the spray container inserted. Prior to the step above, I would have her blow her nose to increase patency. I would also warn her against exposure to chickenpox (Jones &amp; Bartlett, 2020).</b>
<b>How much would medication cost per month if paying out of pocket?</b>	<b>160/4.5 mcg per dose of 2 puffs of budesonide-formoterol fumarate equates to \$154.54 per month (WellRx, 2020).</b>

<b>Drug #5</b>  <b>Pharmacological Drug Class: NSAID</b>  <b>Therapeutic Drug Class: Analgesic</b>	<b>Drug Name (Generic): meloxicam</b>  <b>Drug Name (Trade): Mobic</b>
<b>How is the medication taken: (include dose, route, and frequency)</b>	<b>This medication is consumed orally at 15 mg per dose once a day.</b>
<b>Specific Directions not included above:</b>	<b>This medication does not require specific instructions; take it as prescribed.</b>
<b>Does this medication interact with any other medication(s) on this list? (see rubric for further instruction)</b>	<b>Hydrochlorothiazide can interact with this medication and reduce the diuretic function; it can cause renal failure (Jones &amp; Bartlett Learning, 2020).</b>
<b>Lifestyle interactions:</b>  <b>(Daily tobacco use, alcohol, drugs, etc.)</b>	<b>Smoking can cause GI bleeding. It is not listed; however, alcohol can also cause GI bleeding (Jones &amp; Bartlett Learning, 2020).</b>
<b>Does any of the client's past medical history contradict the use of this medication?</b>	<b>The client's allergic rhinitis contradicts the use of this medication due to nasal blockage induction (Jones &amp; Bartlett Learning, 2020).</b>
<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>	<b>The client's arthritis is an inflammatory condition, and this medication suppresses inflammatory responses and reduces the edema, erythema, and pruritis that come with the condition (Prednisone, 2018). Also, pain is reduced due to prostaglandin inhibition</b>

<b>history, please list potential indications for use of the medication in general)</b>	<b>(Jones &amp; Bartlett Learning, 2020).</b>
<b>What would you teach the client about taking this medication?</b>	<b>I would instruct the client to report hydrochlorothiazide medication interaction signs and symptoms of decreased diuresis and renal failure such as urinary retention, fatigue, dependent edema, worsened hypertension, dyspnea, and confusion (Jones &amp; Bartlett Learning, 2020). I would instruct her to consume this medication with food to prevent GI upset. I would instruct her to avoid taking aspirin or other NSAIDs because of potential hepatotoxicity (Jones &amp; Bartlett Learning, 2020). I would instruct her to avoid alcohol and smoking because of they can cause GI bleeding (Jones &amp; Bartlett Learning, 2020). I would instruct her to report jaundice-like symptoms including yellow eyes, skin, and dark urine that can come from. I would instruct her to report symptoms of cardiovascular complications such as angina, dyspnea, or slurred speech (Jones &amp; Bartlett Learning, 2020).</b>
<b>How much would medication cost per month if paying out of pocket?</b>	<b>15 mg per tablet at 30 tablets per bottle of meloxicam equates to \$19.42 per month (WellRx, 2020).</b>

<p><b>Drug #6</b></p> <p><b>Pharmacological Drug Class: Imidazopyridine</b></p> <p><b>Therapeutic Drug Class: Hypnotic</b></p>	<p><b>Drug Name (Generic): zolpidem tartrate</b></p> <p><b>Drug Name (Trade): Ambien</b></p>
<p><b>How is the medication taken: (include dose, route, and frequency)</b></p>	<p><b>This medication is consumed orally at 10 mg per dose at bedtime.</b></p>
<p><b>Specific Directions not included above:</b></p>	<p><b>This medication is listed to be taken at bedtime due its sleep-enhancing effects (Jones &amp; Bartlett Learning, 2020).</b></p>
<p><b>Does this medication interact with any other medication(s) on this list? (see rubric for further instruction)</b></p>	<p><b>Ciprofloxacin can interact with this medication and can cause an increase in serum levels and adverse effects such as drug toxicity (Jones &amp; Bartlett Learning, 2020).</b></p>
<p><b>Lifestyle interactions:</b></p>	<p><b>It is not listed; however, all food items reduce the effects of this medication while</b></p>

<b>(Daily tobacco use, alcohol, drugs, etc.)</b>	<p>increase serum levels (Jones &amp; Bartlett Learning, 2020).</p> <p>It is not listed; however, alcohol increases CNS depression (Jones &amp; Bartlett Learning, 2020).</p>
<b>Does any of the client's past medical history contradict the use of this medication?</b>	<p>No, the client's past medical history does not contradict this medication (Jones &amp; Bartlett Learning, 2020).</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>The client's insomnia is treated by this medication. This medication used the inhibitory effects of GABA to promote the deep stage of sleep (Jones &amp; Bartlett Learning, 2020).</p>
<b>What would you teach the client about taking this medication?</b>	<p>I would instruct the client to report ciprofloxacin medication interaction signs and symptoms of drug toxicity: confusion, dizziness, seizures, dysphagia, hematuria, myopathy, renal calculi, and orthostatic hypotension (Jones &amp; Bartlett Learning, 2020).</p> <p>I would instruct her to avoid alcohol because it causes CNS depression. I would instruct her to ingest the drug at bedtime as prescribed on an empty stomach because food decreases the therapeutic effects (Jones &amp; Bartlett Learning, 2020). I would instruct her to report abdominal pain and fatigue to her provider. I would instruct her to report to</p>

	<b>her provider if she experienced dyspnea, throat swelling and tightness, or nausea (Jones &amp; Bartlett Learning, 2020). I would instruct her close family to report suicidal actions.</b>
<b>How much would medication cost per month if paying out of pocket?</b>	<b>10 mg per tablet at 30 tablets per bottle of zolpidem equates to \$23.08 per month (WellRx, 2020).</b>

<b>Drug #7</b>	<b>Drug Name (Generic): ciprofloxacin</b>
<b>Pharmacological Drug Class: Fluoroquinolone derivative</b>	<b>Drug Name (Trade): Cipro</b>
<b>Therapeutic Drug Class: Antibiotic</b>	
<b>How is the medication taken: (include dose, route, and frequency)</b>	<b>This medication is consumed orally at 750 mg per dose every 12 hours.</b>
<b>Specific Directions not included above:</b>	<b>This medication does not require specific instructions; take it as prescribed.</b>
<b>Does this medication interact with any other</b>	<b>Zolpidem tartrate can interact with this medication and can cause an increase in serum</b>

<b>medication(s) on this list? (see rubric for further instruction)</b>	<b>levels and adverse effects such as drug toxicity (Jones &amp; Bartlett Learning, 2020). Meloxicam can cause seizures (Jones &amp; Bartlett Learning, 2020).</b>
<b>Lifestyle interactions: (Daily tobacco use, alcohol, drugs, etc.)</b>	<b>It is not listed; however, caffeine can act synergistically with itself, which enhances caffeine's effects (Jones &amp; Bartlett Learning, 2020).  It is not listed; however, dairy products can slow the absorption of this medication (Jones &amp; Bartlett Learning, 2020).</b>
<b>Does any of the client's past medical history contradict the use of this medication?</b>	<b>No, the client's past medical history does not contradict the use of this medication (Jones &amp; Bartlett Learning, 2020).</b>
<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>	<b>The client's community-acquired pneumonia is treated by this medication; it causes a disruption of DNA replication in the bacteria (Jones &amp; Bartlett Learning, 2020).</b>
<b>What would you teach the client about taking this medication?</b>	<b>I would instruct the client to report zolpidem tartrate medication interaction signs and symptoms of drug toxicity such as an abnormal gait, jaundice, abdominal pain, myalgia, and angina (Jones &amp; Bartlett Learning, 2020). Meloxicam can cause epileptic activity, so report any seizures (Jones &amp; Bartlett Learning, 2020). I would instruct her to avoid</b>

	<p>caffeine because this medication can enhance caffeine’s effects (Jones &amp; Bartlett Learning, 2020). I would instruct her to avoid dairy products as they can decrease the rate of absorption of this medication (Jones &amp; Bartlett Learning, 2020). I would instruct her to complete the entire course of this medication to ensure the bacteria is completely killed off and no resistance develops. I would instruct her to not consume dairy products because they slow the absorption of this medication (Jones &amp; Bartlett Learning, 2020). I would instruct her remain hydrated to prevent crystalluria. I would instruct her to report changes in limb sensation or inflammation. I would instruct her to report watery hematochezia (Jones &amp; Bartlett Learning, 2020).</p>
<p>How much would medication cost per month if paying out of pocket?</p>	<p>750 mg per tablet at 60 tablets per bottle of ciprofloxacin equates to \$82.62 per month (WellRx, 2020).</p>

<p>Drug #8</p>	<p>Drug Name (Generic): guaifenesin</p>
<p>Therapeutic Drug Class: Expectorant</p>	<p>Drug Name (Trade): Cheratussin</p>
<p>How is the medication taken: (include dose, route,</p>	<p>This medication is consumed orally at 1 tsp per dose every 4 hours as needed.</p>

<b>and frequency)</b>	
<b>Specific Directions not included above:</b>	<b>This medication should be taken with food to prevent stomach upset (Jones &amp; Bartlett, 2020).</b>
<b>Does this medication interact with any other medication(s) on this list? (see rubric for further instruction)</b>	<b>No, this medication does not interact with any other current medications (Albrecht et al., 2017).</b>
<b>Lifestyle interactions: (Daily tobacco use, alcohol, drugs, etc.)</b>	<b>It is not listed; however, alcohol can contribute to CNS depression (Albrecht et al., 2017).</b>
<b>Does any of the client's past medical history contradict the use of this medication?</b>	<b>The client's hypertension contradicts the use of this medication (Albrecht et al., 2017).</b>
<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>	<b>The client's COPD is treated with this medication; this medication causes phlegm to thin in the entire respiratory tract making it easier to expectorate resulting in an easier respiratory drive (Albrecht et al., 2017).  The client's seasonal allergies can be treated with this medication because it helps open the airway (Albrecht et al., 2017).</b>
<b>What would you teach the client about taking this medication?</b>	<b>I would instruct the client avoid alcohol because it can cause CNS depression.  I would instruct her to accurately measure the liquid dose with a measuring device, not</b>

	<b>a regular spoon (Albrecht et al., 2017). I would instruct her to stick with the dose as prescribed and not to ingest more. I would instruct her to report allergic reactions such as erythema, pruritis, and dyspnea to her provider immediately (Albrecht et al., 2017).</b>
<b>How much would medication cost per month if paying out of pocket?</b>	<b>10-100 mg per 5 mL at 900 mL per bottle of Cheratussin equates to \$67.45 (WellRx, 2020).</b>

<b>Drug #9</b>	<b>Drug Name (Generic): acetaminophen-codeine sulfate/phosphate</b>
<b>Pharmacological Drug Class of acetaminophen:</b>	<b>Drug Name (Trade): Tylenol-Codeine</b>
<b>Nonsalicylate, para-aminophenol derivative</b>	

<p><b>Therapeutic Drug Class of acetaminophen:</b></p> <p><b>Antipyretic, nonopioid analgesic</b></p> <p><b>Pharmacological Drug Class of codeine sulfate/phosphate: Opioid</b></p> <p><b>Therapeutic Drug Class of codeine sulfate/phosphate: Antitussive, opioid analgesic</b></p>	
<p><b>How is the medication taken: (include dose, route, and frequency)</b></p>	<p><b>This medication is consumed orally at 30 mg of codeine and 300 mg of acetaminophen per one tablet dosage every 4-6 hours as needed for pain.</b></p>
<p><b>Specific Directions not included above:</b></p>	<p><b>This medication does not require specific instructions; take it as prescribed.</b></p>
<p><b>Does this medication interact with any other medication(s) on this list? (see rubric for further instruction)</b></p>	<p><b>Hydrochlorothiazide can interact with this medication and worsen hypotensive effects (Jones &amp; Bartlett Learning, 2020).</b></p>
<p><b>Lifestyle interactions:</b></p> <p><b>(Daily tobacco use, alcohol, drugs, etc.)</b></p>	<p><b>It is not listed; however, alcohol can cause a rise in hepatotoxicity, CNS depression in the form of respiratory depression and sedative effects (Jones &amp; Bartlett Learning, 2020).</b></p>
<p><b>Does any of the client's past medical history contradict the use of this medication?</b></p>	<p><b>No, the client's past medical history does not contradict use of this medication (Jones &amp; Bartlett Learning, 2020).</b></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>	<b>The client's pain that comes with arthritis, and potentially COPD, is treated with this medication; it inhibits prostaglandin production and causes pain transmission interference (Jones &amp; Bartlett Learning, 2020).</b>
<b>What would you teach the client about taking this medication?</b>	<b>I would instruct the client to avoid alcohol because of the potential for fatal respiratory depression. I would instruct her to avoid benzodiazepines for the same reason (Jones &amp; Bartlett Learning, 2020). I would instruct her to report hydrochlorothiazide medication interaction signs and symptoms of orthostatic hypotension. I would instruct to her stick to the dosage exactly as prescribed to avoid adverse effects of CNS depression (Jones &amp; Bartlett Learning, 2020). I would instruct her to become aware of liver damage signs and symptoms such as bleeding, bruising, and jaundice. I would instruct her to not exceed 360 mg of codeine and 4,000 mg of acetaminophen to avoid drug toxicity.</b>
<b>How much would medication cost per month if paying out of pocket?</b>	<b>30-300 mg per tablet at 120 tablets per bottle of acetaminophen-codeine equates to \$20.50 per month (WellRx, 2020).</b>

<p><b>Drug #10</b></p> <p><b>Pharmacological Drug Class: Adrenergic</b></p> <p><b>Therapeutic Drug Class: Bronchodilator</b></p>	<p><b>Drug Name (Generic): albuterol sulfate</b></p> <p><b>Drug Name (Trade): AccuNeb</b></p>
<p><b>How is the medication taken: (include dose, route, and frequency)</b></p>	<p><b>This medication is inhaled with a nebulizer at 2.5 mg every 4-6 hours as needed.</b></p>
<p><b>Specific Directions not included above:</b></p>	<p><b>Inhale slowly and deeply to ensure proper administration (Jones &amp; Bartlett, 2020).</b></p>
<p><b>Does this medication interact with any other medication(s) on this list? (see rubric for further instruction)</b></p>	<p><b>No, this medication does not interact with any other current medications (Jones &amp; Bartlett Learning, 2020).</b></p>
<p><b>Lifestyle interactions: (Daily tobacco use, alcohol, drugs, etc.)</b></p>	<p><b>It is not listed; however, caffeine can enhance the stimulant effects of this medication (Jones &amp; Bartlett Learning, 2020).</b></p>
<p><b>Does any of the client's past medical history contradict the use of this medication?</b></p>	<p><b>No, the client's past medical history does not contradict the use of this medication (Jones &amp; Bartlett Learning, 2020).</b></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</b></p>	<p><b>The client's COPD is treated by this medication. It is a short-acting bronchodilator, so it provides quick relief by expanding her airways if she happens to have an exacerbation (Jones &amp; Bartlett Learning, 2020).</b></p>

<b>medication in general)</b>	
<b>What would you teach the client about taking this medication?</b>	<b>I would instruct the client to avoid caffeine due to its stimulant-enhancing effects (Jones &amp; Bartlett Learning, 2020). I would her client to wait one minute between inhalations if more than one dose is required. I would instruct her to ask her provider before using other drugs with the inhalation route. I would instruct her to report signs of allergic reaction such as erythema, pruritis, and dysphagia (Jones &amp; Bartlett Learning, 2020).</b>
<b>How much would medication cost per month if paying out of pocket?</b>	<b>2.5 mg per 3 mL at 75 mL per bottle of albuterol sulfate equates to \$9.75 per month (WellRx, 2020).</b>

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

415 dollars is not a small chunk of change to be spending on monthly medications. When considering monthly expenses for the average family, most people do not have the resources to afford medications of this price. Also, the quantity of medications to take is a barrier. It is hard to keep track of ten medications. There are different frequencies, routes, and dosages needing kept track of, which could bring about unwanted difficulty maintaining upkeep on the prescribed usage. There is a tapered dosing requirement for prednisone, which might confuse the patient on when to take how much of the medicine. Typical life stressors might interrupt her

ability to consume the prednisone in the required tapered dose, and she may take more than prescribed. Those same life stressors may cause her to forget other medications as well. Some medication interactions could also produce unwanted reactions, so if some adverse effects bubble to the surface, it may discourage her from taking all medications as prescribed. Considering she is having insomnia, her sleep deprivation may cause brain fog that enhances incompliance.

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

Fortunately, the client's lifestyle interactions mentioned in the scenario do not deduce any potential interactions with her medications. However, some interactions could be unmentioned, so it is important to educate her on which medications can interact with what items of consumption such as food and drinks. She is old enough to file for Medicare, so that may allow her to purchase each medication in its entirety. Education is the most important aspect of ensuring medication compliance. The client should be educated properly on what the entirety of medication prescription entails. There should be thorough explanations, and the client should receive a medication brochure to use as a reference for why she needs the medication. Before any of the education can be done, it is important to assess her readiness to learn and her level of development to make sure the proper education can be provided.

**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)**

I would discuss with both the prescriber and client about the need for weight loss through either exercise or diet. The client is 68 years old, so I am sure this is not the first time she would hear this. She also needs smoke cessation. Hopefully, for the sake of this case study, both a healthy diet and a consistent exercise routine could be implemented. If successful, a whole slew of this medication regimen could be cut down. For starters, exercise helps tremendously with arthritis by expanding the flexibility and strength potential surrounding arthritic joints. Exercise also reduces pain and inflammation. Tylenol #3, prednisone, and meloxicam, used for pain and inflammation, could be removed from the medication list if exercise works as it should. She could then take over-the-counter pain relievers as desired for intermittent pain. Exercise reduces adiposity; adiposity exacerbates hypertension as does smoking due to atherosclerotic plaque formation. If successful, the client could decrease her weight to the normal range for her height and age, which would reduce her hypertension significantly (Capriotti, 2020). The diuretic, hydrochlorothiazide, would no longer be needed. If she fills her diet with an array of fruits, vegetables, and lean meat and reduces her intake of saturated fatty acids and sodium, her total cholesterol levels would be reduced. Removing cigarettes from her life would also reduce her total cholesterol levels (Capriotti, 2020). Reducing her LDL and triglyceride levels while increasing her HDL levels would reduce the need for simvastatin. Obesity plays a massive role in achieving restful sleep because of the extra tissue obstructing the airway. If she could reduce her weight to the typical range measurements, she would be improving her insomniac condition and reducing the need for a C-pap machine and the hypnotic zolpidem tartrate. Seven medications could be removed from her list, which would lower the risk of having medication and lifestyle interactions. Special considerations regarding exercise must be made due to her diagnosis of COPD. If smoking were to end, her COPD may improve, which would reduce the need for albuterol sulfate, prednisone, and guaifenesin. Those two medications may still

be needed to treat her COPD sporadically, however. If not, the only medication she would need to take would be ciprofloxacin for community-acquired pneumonia. Pneumonia will not last for the duration her weight loss should take, so ciprofloxacin could potentially be removed as well. Each medication has the potential to be completely removed from her medication list; although, albuterol sulfate can be kept for seasonal allergy rescue.

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

Considering insurance rates vary for everyone, and some people do not have any, the cost for all ten medications in one month's time would total up to \$415.50. Most of the medications would be coming from Walmart Pharmacy. Tylenol #3, albuterol sulfate, and Cheratussin would be from CVS Pharmacy (WellRx, 2020).

**Reflective Statement of Experience:**

The polypharmacy project widened my horizon on how difficult it is to keep ahold of the drug-drug and drug-diet interactions. The medications are not always going to interact with one another; although, it is essential to know what could potentially occur if certain medications are taken concurrently. The variability amongst lifestyle factors that can interfere with different medications is vast. Many medication consumers are entirely unaware of how their way of life can dangerously affect their life when taking certain medications. Medication has always been a sore spot for conversation whenever discussing prices; however, there are many tools to find lower prices via online outlets. Insurance coverage is not available for everyone, so it is pleasing to see different opportunities for people who cannot afford insurance.

### References

- Albrecht, H. H., Dicipinigaitis, P. V., & Guenin, E. P. (2017). Role of guaifenesin in the management of chronic bronchitis and upper respiratory tract infections. *Multidisciplinary Respiratory Medicine*, 12. <https://doi.org/10.4081/mrm.2017.260>
- Capriotti, T. (2020). *Davis advantage for pathophysiology: Introductory concepts and clinical perspectives* (2nd ed.). F.A. Davis Company.
- Jones & Bartlett Learning. (2020). *2020 nurse's drug handbook* (19th ed.). Jones & Bartlett Learning.

Prednisone. (2018). *Reactions weekly*, 1694(1), 366. <https://doi.org/10.1007/s40278-018-43767-0>

WellRx. (2020). ScriptSave. <https://www.wellrx.com/discount-pharmacy-prices/?>

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## N322 Polypharmacy Grading Rubric

Criteria	Excellent 40 points	Acceptable 31-39 points	Unacceptable 0-30 points	Points Earned
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Each drug should have a completed breakdown within the tables provided, which includes the following: <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>	All key components were addressed within the paper and were accurate.	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)	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)	___/40
<b>Criteria</b>	<b>Excellent 10 points</b>	<b>Acceptable 8-10 points</b>	<b>Unacceptable 0 - 7 points</b>	<b>Points Earned</b>
Specific Directions not included above: <ul style="list-style-type: none"> <li>• Is there any type of medication on the patient list that have specific directions?  (before bed, before breakfast, 30 minutes before meals, etc..)</li> </ul>	All key components were addressed within the paper.	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 is worth one point)	Student failed to answer the questions and/or the answers were inaccurate. (For each medication this question is worth one point)	___/10
<b>Criteria</b>	<b>Excellent 0 points</b>	<b>Acceptable 16-19</b>	<b>Unacceptable 0-15 points</b>	<b>Points Earned</b>
Does this medication have any potentially serious interactions with any other medication(s)	All medications reviewed and student explained medication interactions.	The student did list some of the potential interactions of the	Student failed to answer question and/or The student did list some of the potential interactions of the	___/20

<p>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>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>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>	
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Criteria	Excellent 5 points	Acceptable 4 points	Unacceptable 0-3 points	Points Earned
<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</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</p>	<p>___/5</p>



Criteria	Excellent 20 points	Acceptable 16-19 points	Unacceptable 0-15 points	Points Earned
<p>general)</p> <p><b>Criteria</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 interactions with other medication this may be a priority over general education for this one medication)</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>
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</li> </ul>	<p>Student had knowledge on why a patient would have difficulty with medication regimen</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</p>	<p>___/10</p>

<p>medication regimen? (Please consider all factors in the scenario and all information provided within your chart – including cost, insurance, frequency of administration, etc)</p>			<p>medication)</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>
<p>Is there anything about this medication regimen/ scenario that might assist the client in maintaining the medication regimen as ordered?</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>	<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 question is worth one point for each medication)</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 compliance. (This question is worth one point for each medication)</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 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</li> </ul>	<p>Student showed research on medication costs</p>	<p>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</p>	<p>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</p>	<p>___/15</p>

<p>client's monthly out of pocket expense for all 10 medications?</p>		<p>points)</p>	<p>being worth 5 points)</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>The student must appropriately format the paper and include all of the following:</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</li> </ul>	<p>The document included a title page, the rubric, the client scenario, a reference page which included five references that were cited within the document. APA formatting was consistent with the APA manual.</p>	<p>The document did not meet all of the criteria for formatting/ referencing. See “criteria” to the left for further breakdown.</p>	<p>The document did not meet all of the criteria for formatting/ referencing. See “criteria” to the left for further breakdown.</p>	<p>___/20</p>

reference with one citation is worth 5 points)				
<b>Criteria</b>	<b>Excellent 20 points</b>	<b>Acceptable 16-19 points</b>	<b>Unacceptable 0-15 points</b>	<b>Points Earned</b>
<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>	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.	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.	The student failed to answer the question OR the student answered the question, however the students answer was dangerously inaccurate.	___/20
<b>Criteria</b>	<b>Excellent 10 points</b>	<b>Acceptable 8-9 points</b>	<b>Unacceptable 0-7 points</b>	<b>Points Earned</b>
<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</li> </ul> </li> </ul>	The students provided reflection showed good insight into the project itself, polypharmacy, and the nurses role in client advocacy	The student provided a reflection, however the reflection lacked one of the following <ul style="list-style-type: none"> <li>-insight into the project itself (a specific example within the project and its</li> </ul>	Student failed to reflect on their project OR the student addressed only of the topics of reflection	___/10

<p>polypharmacy                  -A reflection on this student nurses role in this scenario as a client                  advocate/educator/caregiver</p>		<p>implications).                  -A basic understanding of polypharmacy                  -A reflection on this student nurses role in this scenario as a client                  advocate/educator/caregiver</p>		
<p><b>Total Points</b></p>				<p><u>          </u>/200</p>