

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, 2019).</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, 2019).</b></p> <p><b>Prednisone can interact with this medication causing a reduction in diuresis and potassium levels (Jones &amp; Bartlett Learning, 2019).</b></p> <p><b>Budesonide can interact with this medication and cause hypokalemia alongside other electrolyte insufficiencies (Jones &amp; Bartlett Learning, 2019).</b></p> <p><b>Acetaminophen-codeine can interact with this medication and increase hypotensive effects of the diuretic (Jones &amp; Bartlett Learning, 2019).</b></p>
<p><b>Lifestyle interactions:</b></p> <p><b>(Daily tobacco use, alcohol, drugs, etc.)</b></p>	<p><b>Alcohol can cause orthostatic hypertension (Jones &amp; Bartlett Learning, 2019).</b></p>

<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, 2019).</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.</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. Also, I would instruct her to report dizziness with sudden position changes due to orthostatic hypotension caused by acetaminophen-codeine.</b>  <b>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. 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 one day. I would instruct the client to consume foods</b>

	<p>with a high amount of potassium. I would instruct the client to inform a healthcare team member about a reduction in output.</p> <p>All the statements above were received from the <i>2020 Nurse's Drug Handbook</i>.</p>
How much would medication cost per month if paying out of pocket?	50 mg per tablet at 60 tablets per bottle of hydrochlorothiazide equates to \$8.00 per month (WellRx, 2020)

<p><b>Drug #2</b></p> <p><b>Pharmacological Drug Class: HMG-CoA reductase inhibitor</b></p> <p><b>Therapeutic Drug Class: Antilipemic</b></p>	<p><b>Drug Name (Generic): simvastatin</b></p> <p><b>Drug Name (Trade): Zocor</b></p>
How is the medication taken: (include dose, route, and frequency)	This medication is consumed orally at 40 mg per dose at night.
Specific Directions not included above:	This medication is listed to be taken at night because it lowers cholesterol; cholesterol is synthesized at night.
Does this medication interact with any other	Prednisone can interact with this medication and cause acute renal failure (Jones &

<b>medication(s) on this list? (see rubric for further instruction)</b>	<b>Bartlett Learning, 2019).</b>
<b>Lifestyle interactions: (Daily tobacco use, alcohol, drugs, etc.)</b>	<b>It is not listed; however, grapefruit juice should be avoided due to the risk of myopathy and rhabdomyolysis (Jones &amp; Bartlett Learning, 2019).</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, 2019).</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 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, 2019). These are evidently elevated due to her poor lifestyle decisions regarding diet, smoking, and potentially exercise.</b>
<b>What would you teach the client about taking this medication?</b>	<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.</b></p> <p><b>I would instruct her to take this medication at night. I would instruct her to consume foods low in saturated fats and cholesterol. 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. 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.</p> <p>All the statements above were received from the <i>2020 Nurse's Drug Handbook</i>.</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, and frequency)</b></p>	<p><b>This medication is consumed orally at 10 mg per tablet and is tapered over 12 days. The initial dose requires 6 tablets (60 mg) for the first two days. Then, the succeeding days in groups of two (3 &amp; 4, 5 &amp; 6, 7 &amp; 8, 9 &amp; 10, 11 &amp; 12) will require the dose to be tapered</b></p>

	by 1 less tablet per paired days ending with 1 tablet on the final pair.
<b>Specific Directions not included above:</b>	<b>This medication should be taken in the morning to enhance its cortisol-mimicking effect (Jones &amp; Bartlett, 2019).</b>
<b>Does this medication interact with any other medication(s) on this list? (see rubric for further instruction)</b>	<p><b>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, 2019).</b></p> <p><b>Hydrochlorothiazide can interact with medication causing a reduction in diuresis and potassium levels (Jones &amp; Bartlett Learning, 2019).</b></p> <p><b>Simvastatin can interact with this medication and cause acute renal failure (Jones &amp; Bartlett Learning, 2019).</b></p> <p><b>Meloxicam can interact with this medication and reduce the diuretic function; it can cause renal failure (Jones &amp; Bartlett Learning, 2019).</b></p>
<b>Lifestyle interactions: (Daily tobacco use, alcohol, drugs, etc.)</b>	<p><b>It is not listed; however, sodium-containing foods can cause edema and exacerbate the client's hypertension (Jones &amp; Bartlett Learning, 2019).</b></p> <p><b>Alcohol is not listed either, but it can cause GI bleeding through ulceration (Jones &amp; Bartlett Learning, 2019).</b></p>

<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, 2019).</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 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). The client's COPD is also treated with this anti-inflammatory steroid, which reduces potential bronchospasms (Prednisone, 2018).</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 current medication interactions. Acetaminophen-codeine can cause liver damage, so report jaundice-like characteristics. Hydrochlorothiazide can cause decreased diuresis, so report urinary retention and worsening hypertension; hypokalemic cardiac dysrhythmias should be reported. Simvastatin can cause renal failure so report urinary retention, fatigue, dependent edema, worsened hypertension, dyspnea, and confusion. Meloxicam can also cause renal failure and diuretic reduction signs and symptoms mentioned above.  I would instruct her to consume food with this medication to ensure no GI upset. I</b>

	<p>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. I would instruct the client to report arthritic joint pain and edema right away to her provider. All the statements above were received from the <i>2020 Nurse's Drug Handbook</i>.</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</b></p> <p><b>Drug Name (Trade): Uceris</b></p>
<p><b>How is the medication taken: (include dose, route, and frequency)</b></p>	<p><b>This medication is orally inhaled two times a day at 160/4.5 mcg per 2 puffs.</b></p>
<p><b>Specific Directions not included above:</b></p>	<p><b>This medication should involve a rinse-and-spit after the second puff (Jones &amp; Bartlett,</b></p>

	2019).
<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, 2019).</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, 2019).</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, 2019).</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, 2019).</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</b>

	<p><b>weakness or cramps, and numbness and tingling. I would instruct her to avoid grapefruit juice because it can cause adrenal insufficiency, pancreatitis, bronchospasm, and anaphylaxis.</b></p> <p><b>I would instruct her to shake the inhaler before using it and to not use a spacer. 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.</b></p> <p><b>All the statements above were received from the <i>2020 Nurse's Drug Handbook</i>.</b></p>
<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 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, 2019).</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, 2019).</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 (Cingi et al., 2011)</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, 2019).</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.</b> <b>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 (meloxicam) because of potential hepatotoxicity. I would instruct her to avoid alcohol and smoking because of they can cause GI bleeding. 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.</b> <b><i>All the statements above were received from the 2020 Nurse's Drug Handbook.</i></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.</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, 2019).</b></p>
<p><b>Lifestyle interactions:</b> <b>(Daily tobacco use, alcohol, drugs, etc.)</b></p>	<p><b>It is not listed; however, all food items reduce the effects of this medication while increase serum levels (Jones &amp; Bartlett Learning, 2019).</b></p>

	<b>It is not listed; however, alcohol increases CNS depression (Jones &amp; Bartlett Learning, 2019).</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, 2019).</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 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, 2019).</b>
<b>What would you teach the client about taking this medication?</b>	<b>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. I would instruct her to avoid alcohol because it causes CNS depression.</b>  <b>I would instruct her to ingest the drug at bedtime as prescribed on an empty stomach because food decreases the therapeutic effects. I would instruct her to report abdominal pain and fatigue to her provider. I would instruct her to report to her provider if she</b>

	<p>experienced dyspnea, throat swelling and tightness, or nausea. I would instruct her close family to report suicidal actions.</p> <p>All the statements above were received from the <i>2020 Nurse's Drug Handbook</i>.</p>
<p>How much would medication cost per month if paying out of pocket?</p>	<p>10 mg per tablet at 30 tablets per bottle of zolpidem tartrate equates to \$23.08 per month (WellRx, 2020).</p>

<p><b>Drug #7</b></p> <p><b>Pharmacological Drug Class: Fluoroquinolone derivative</b></p> <p><b>Therapeutic Drug Class: Antibiotic</b></p>	<p><b>Drug Name (Generic): ciprofloxacin</b></p> <p><b>Drug Name (Trade): Cipro</b></p>
<p><b>How is the medication taken: (include dose, route, and frequency)</b></p>	<p><b>This medication is consumed orally at 750 mg per dose every 12 hours.</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>

<b>Does this medication interact with any other medication(s) on this list? (see rubric for further instruction)</b>	<b>Zolpidem tartrate can interact with this medication and can cause an increase in serum levels and adverse effects such as drug toxicity (Jones &amp; Bartlett Learning, 2019). Meloxicam can cause seizures (Jones &amp; Bartlett Learning, 2019).</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, 2019). It is not listed; however, dairy products can slow the absorption of this medication (Jones &amp; Bartlett Learning, 2019).</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, 2019).</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, 2019).</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,</b>

	<p><b>and angina. Meloxicam can cause epileptic activity, so report any seizures. I would instruct her to avoid caffeine because this medication can enhance caffeine's effects. I would instruct her to avoid dairy products as they can decrease the rate of absorption of this medication.</b></p> <p><b>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. 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 urger watery, hematochezia.</b></p> <p><b><i>All the statements above were received from the 2020 Nurse's Drug Handbook.</i></b></p>
<p><b>How much would medication cost per month if paying out of pocket?</b></p>	<p><b>750 mg per tablet at 60 tablets per bottle of ciprofloxacin equates to \$82.62 per month (WellRx, 2020).</b></p>

<b>Drug #8</b>	<b>Drug Name (Generic):</b> guaifenesin
<b>Therapeutic Drug Class:</b> Expectorant	<b>Drug Name (Trade):</b> Cheratussin
<b>How is the medication taken: (include dose, route, and frequency)</b>	<b>This medication is consumed orally at 1 tsp per dose every 4 hours as needed.</b>
<b>Specific Directions not included above:</b>	<b>This medication should be taken with food to prevent stomach upset (Jones &amp; Bartlett, 2019).</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</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, smoother respiratory drive (Albrecht et al., 2017).  The client's seasonal allergies can be treated with this medication because it helps open</b>

<b>medication in general)</b>	the airway (Albrecht et al., 2017).
<b>What would you teach the client about taking this medication?</b>	<p>I would instruct the client avoid alcohol because it can cause CNS depression.</p> <p>I would instruct her to accurately measure the liquid dose with a measuring device, not a regular spoon. 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.</p> <p>All the statements above were received from <i>Multidisciplinary Respiratory Medicine</i>.</p>
<b>How much would medication cost per month if paying out of pocket?</b>	10-100 mg per 5 mL at 900 mL per bottle of Cheratussin equates to \$67.45 (WellRx, 2020).

<b>Drug #9</b>	<b>Drug Name (Generic): acetaminophen-codeine sulfate/phosphate</b>
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<p><b>Pharmacological Drug Class of acetaminophen:</b></p> <p><b>Nonsalicylate, para-aminophenol derivative</b></p> <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>Drug Name (Trade): Tylenol-Codeine</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, 2019).</b></p>
<p><b>Lifestyle interactions: (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,</b></p>

	2019).
<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 use of this medication (Jones &amp; Bartlett Learning, 2019).</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 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, 2019).</b>
<b>What would you teach the client about taking this medication?</b>	<p><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. I would instruct her to report hydrochlorothiazide medication interaction signs and symptoms of orthostatic hypotension.</b></p> <p><b>I would instruct to her stick to the dosage exactly as prescribed to avoid adverse effects of CNS depression. I would instruct her to become aware of liver damage signs and symptoms such as bleeding, bruising, and jaundice.</b></p> <p><b>All the statements above were received from the 2020 Nurse's Drug Handbook.</b></p>

	<b>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>

<b>Drug #10</b>	<b>Drug Name (Generic): albuterol sulfate</b>
<b>Pharmacological Drug Class: Adrenergic</b>	<b>Drug Name (Trade): AccuNeb</b>
<b>Therapeutic Drug Class: Bronchodilator</b>	
<b>How is the medication taken: (include dose, route,</b>	<b>This medication is inhaled with a nebulizer at 2.5 mg every 4-6 hours as needed.</b>

<b>and frequency)</b>	
<b>Specific Directions not included above:</b>	<b>Inhale slowly and deeply to ensure proper administration (Jones &amp; Bartlett, 2019).</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 (Jones &amp; Bartlett Learning, 2019).</b>
<b>Lifestyle interactions: (Daily tobacco use, alcohol, drugs, etc.)</b>	<b>It is not listed; however, caffeine can enhance the stimulant effects of this medication (Bushra et al., 2011).</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, 2019).</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 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, 2019).</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. 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</b>

	<p><b>inhalation route. I would instruct her to report signs of allergic reaction such as erythema, pruritis, and dysphagia.</b></p> <p><b>All the statements above were received from the <i>2020 Nurse's Drug Handbook</i>.</b></p>
<p><b>How much would medication cost per month if paying out of pocket?</b></p>	<p><b>2.5 mg per 3 mL at 75 mL per bottle of albuterol sulfate equates to \$9.75 per month (WellRx, 2020).</b></p>

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

\$415 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 thoroughly explanations, and the client should receive a medication brochure to use 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. 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. 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 for her, 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. The two respiratory-enhancing 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 and budesonide may be kept for seasonal allergy rescue.

**What would be 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 insurance, 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 they live 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 it.

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