

Polypharmacy Project

Benjamin Ruettiger BSN Student, Nicholas Alford BSN Student, Ashley Shields BSN Student

N322 Introduction to Pharmacology

Lakeview College of Nursing

Pamela Armstrong AP-C, MSN, RN

April 9th, 2025

Background: Caroline is a 78-year-old female that resides at home with her daughter who is her primary care giver. No one else lives with them. Caroline requires extensive assistance from her daughter 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 has a history of smoking – but quit about ten years ago. She has a history of drinking socially, and currently drinks one glass of wine a day at lunch. Caroline and her daughter have no other family in the area.

Economics: Caroline's husband is deceased. His pension ended when he died so Caroline does not receive it. She does not qualify for Social Security because she never worked outside the home and did not pay employment quarters to the federal government. She has no income. Caroline's daughter is 57 and retired from the post office. She has a pension of \$2100/month and is not old enough to draw Social Security. She can't work an outside job because of the amount of care and supervision Caroline needs.

Insurance: Medicare, no supplement

Allergies: Penicillin & Peanuts

Diet: Mechanical Soft with thick liquids related to difficulty chewing

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

Current medications include the following:

Zyprexa 7.5 mg by mouth one time a day

Donepezil 10 mg by mouth at HS

Colace 200 mg by mouth one time a day

Haloperidol 2 mg IM every 4 hour PRN for agitation

Albuterol nebulizer every 6 hours daily and Q 2 hours prn for wheezing and shortness of breath

ProAir HFA take 2 puffs via inhalation four times a daily PRN

Namenda 5 mg by mouth twice a day

Ibuprofen 400 mg by mouth every 6 hours PRN pain

Lipitor 30 mg by mouth once daily

Miralax 17 gm mixed in 8 ounces of juice or water by mouth once a day as needed for constipation

Drug #1	Drug Name (Generic): olanzapine Drug Name (Trade): ZYPREXA Drug Class: Pharmacological: Thienobenzodiazepine derivative Therapeutic: atypical antipsychotic
How is the medication taken: (include dose, route, and frequency)	<u>Oral disintegrating tablets:</u> Adults: Initially 5-10mg QD, increasing to 10 mg. 20 mg max. Adolescents age 13+: initial 2.5 mg QD, increasing to 10mg. Max of 20mg. <u>IM Injection ER:</u> Adults (who have been taking 10mg QD PO): initially 210mg every 2wk for the first 8 weeks. Then decrease to 150mg every 2wk/or 405mg every 4 weeks for the first 8 weeks. Then decrease to 300mg every 4wk (Nurse's Drug Handbook, 2024, pp. 996-997).
Specific Directions not included above:	For elderly, debilitated, or clients prone to hypotension: Reduce initial oral to 5mg and 150mg every 4 weeks for IM (Nurse's Drug Handbook, 2024, p. 997).
Does this medication interact with any other	Donepezil (anticholinergics) - may increase the risk of severe GI issues and dizziness.

medication(s) on this list? (see rubric for further instruction)	Zyprexa, Haloperidol, Albuterol, ProAir, and Namenda (CNS depressants) - compounding CNS depression and potential for dizziness and orthostatic hypotension. Additionally, extrapyramidal symptoms or QT prolongation (Drugs.com, 2025).
Lifestyle interactions: (Daily tobacco use, alcohol, drugs, etc.)	Avoid alcohol use when taking it, as it may enhance CNS depression. It may cause weight gain. Smoking will reduce blood concentration levels of this drug (Drugs.com, 2025).
Does any of the client's past medical history contradict the use of this medication?	Nothing medically contradicts the use of this medication; however, the patient may need to cease their daily glass of wine when taking this medication (Drugs.com, 2025).
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)	While this med is primarily used for schizophrenia and bipolar disorder, it is likely it is being taken as an alternative means to address patients' physically combative behaviors (Nurse's Drug Handbook, 2024, p. 999).
What would you teach the client about taking this medication? You must prioritize 2 (see rubric)	1. The tablets are fragile and disintegrate easily. Therefore, this medication must be removed by peeling back the foil, not by pushing the pill against it. The pill must then be

	moved with a dry hand into the mouth immediately. 2. Involve family and friends of the client to monitor the client for potential suicidal ideation as a side effect of taking this medication (Nurse's Drug Handbook, 2024, p. 997).
How much would medication cost per month if paying out of pocket?	Switch to generic disintegrating tablets to limit swallowing issues. However, due to formulation issues, the patient will require a shift from 7.5mg/day down to 5mg or up to 10mg. Given reports her aggression has been increasing, I would recommend consulting with the physician to approve titration of up to 10mg to better manage agitation. This comes with the additional benefit of allowing for this disintegrating formulation, as well as cutting this medication cost by nearly over 80%! Down from \$609.34 to \$73.27/month when purchasing a 30-pack of 10mg pills (Drugs.com, 2025).

Drug #2	Drug Name (Generic): donepezil Drug Name (Trade): ARICEPT
----------------	---

	Drug Class: Pharmacological: Acetylcholinesterase inhibitor Therapeutic class: Antidementia
How is the medication taken: (include dose, route, and frequency)	<u>Oral solution, disintegrating tablets, or transdermal patch (same rules apply for all):</u> Adults: initially 5mg QD. After 4-6 weeks, increase to 10mg QD PRN w/ max of 10mg/day (Drugs.com, 2025).
Specific Directions not included above:	Take it at bedtime. Do not crush/chew/cut the tablet & allow it to dissolve on the tongue, chase it with water. Use a calibrated syringe for measuring oral solutions (Drugs.com, 2025).
Does this medication interact with any other medication(s) on this list? (see rubric for further instruction)	Haloperidol - May cause additive CNS effects (Drugs.com, 2025). Olanzapine - Increase confusion or cognitive disturbance (Drugs.com, 2025).
Lifestyle interactions: (Daily tobacco use, alcohol, drugs, etc.)	Do not use transdermal patch applications if the client has a history of allergic contact dermatitis (Drugs.com, 2025).

Does any of the client's past medical history contradict the use of this medication?	Nothing provided suggests an issue.
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)	The patient has a diagnosis of Alzheimer's.
What would you teach the client about taking this medication? You must prioritize 2 (see rubric)	1. Advise family/caregivers that the patient should avoid hazardous activities until the drug effects on the client's CNS are known/resolved as a safety precaution (Nurse's Drug Handbook, 2023, p. 410). 2. Educate family/caregivers on how to apply the patch. The patch should not be left in direct sunlight. Can bathe with the patch on. (Nurse's Drug Handbook, 2024, p. 409)
How much would medication cost per month if paying out of pocket?	Switch to disintegrating tablets at a cost of \$18.22/month to reduce swallowing issues. This does constitute an increase in cost from \$13.20/month, but given the nominal increase for safety and set against the hundreds of dollars of savings from other

	medication changes we have made, this is still our given recommendation (Drugs.com, 2025)
Drug #3	Drug Name (Generic): docusate sodium Drug Name (Trade): COLACE Drug Class: Stool softener
How is the medication taken: (include dose, route, and frequency)	The medication is ordered 200 mg by mouth one time a day. Usual Adult Dose for Constipation: 50 to 300 mg daily, divided into 1 to 4 doses each day (Drugs.com, 2025).
Specific Directions not included above:	This med pulls body fluids to GI tract to increase hydration & motility of stool bulk. Therefore, take with water to aid in stool softening effect & combat constipation (Drugs.com, 2025).
Does this medication interact with any other medication(s) on this list? (see rubric for further	Nothing provided suggests an issue.

instruction)	
Lifestyle interactions: (Daily tobacco use, alcohol, drugs, etc.)	Clients with dysphagia on thickened liquids are highly prone to inadequate hydration. Colace necessitates keeping a keen awareness of the client's hydration status and maintaining adequate fluid intake. Furthermore, the client's impaired kidney clearance and daily alcohol consumption could further disrupt the metabolism and excretion of this and other substances (Drugs.com).
Does any of the client's past medical history contradict the use of this medication?	None provided.
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)	Treats constipation. It is possible our client experiences this periodically. Advanced age and decreased mobility can be contributing factors. It is also worth considering that our patient is on a mechanical soft and thick liquid diet (Drugs.com, 2025).
What would you teach the client about taking this medication? You must prioritize 2 (see rubric)	1. Not for daily use on a long-term basis. This may create a degree of dependency and paradoxical effect (Drugs.com, 2025).

	2. The caregiver will want to encourage fiber intake (Drugs.com, 2025).
How much would medication cost per month if paying out of pocket?	Switch to generic Docusate oral solution– purchase 1L oral solution at a time, and the patient will use approximately .6L/month. 1L solution costs \$17.71, averaging monthly cost to approximately \$10.63/month, to reduce client costs and prevent swallowing issues. This is down from \$36.70/month for the current formulation the patient is receiving. (Drugs.com, 2025)
Drug #4	Drug Name (Generic): <i>albuterol sulfate</i> Drug Name (Trade): ACCUNEB (nebulizer) Drug Class: Pharmacological class: Adrenergic Therapeutic class: Bronchodilator
How is the medication taken: (include dose, route, and frequency)	<u>Inhalation powder (PROAIR or DIGIHALER) & aerosol formulations (VENTOLIN):</u> Adults and children 4+: 2 inhalations 15-30 min before activity/exercise (Nurse's Drug Handbook, 2024, pp. 34-35).. <u>ER Tablets:</u> Adults and children 12+: initially 4 or 8mg doses BID, maximum of 16mg doses BID. Children ages 6-12: Initial 4mg BID, maximum of 12mg BID (Nurse's Drug Handbook,

2024, pp. 34-35)..

Syrup:

Adults and ages 14+: Initially 2 or 4mg doses given TID or QID. Increase as needed to 8mg QID. Maximum of 32mg in a day (Nurse's Drug Handbook, 2024, pp. 34-35)..

Children ages 6-14: Initially, 2mg doses TID or QID. Increase to max dose as needed. Maximum of 24mg in a day (Drugs.com, 2025).

Children ages 2-6: Initially 0.1mg/kg TID (do not exceed 2mg TID). Increase as needed to 0.2mg/kg TID (do not exceed 4mg TID). Maximum of 12mg in a day (Nurse's Drug Handbook, 2024, pp. 34-35)..

Tablets:

Adults and ages 12+: Initially, 2 or 4mg doses TID or QID. Increase as needed to 8mg QID. Maximum of 32mg in a day (Nurse's Drug Handbook, 2024, pp. 34-35)..

Children ages 6-12: Initially 2mg TID or QID. Increase as needed to max dose. Maximum of 24mg in a day (Nurse's Drug Handbook, 2024, pp. 34-35)..

Inhaled solution:

Adults and ages 12+, and including ages 2-12 if weighing in excess of 33 lb: 2.5mg TID or QID, as needed, by nebulization (Nurse's Drug Handbook, 2024, pp. 34-35)..

	Children 2-12 weighing less than 33 lb: Initially 0.63mg or 1.25mg doses given TID or QID, as needed, by nebulization (Nurse's Drug Handbook, 2024, pp. 34-35).. <u>Inhaled powder(PROAIR, DIGIHALER) or aerosols(VENTOLIN):</u> Adults and ages 4+: 1 inhalation every 4 hours, or 2 every 4-6 hours (Nurse's Drug Handbook, 2024, pp. 34-35).
Specific Directions not included above:	Do not break/crust/cut extended-release tablets or mix with food. Swallow tablets whole. Use an accurate measuring device for syrup doses. For inhalants, exhale completely before inhaling medication thoroughly. Provide at least 1 minute between inhales (Nurse's Drug Handbook, 2024, pp. 35-36).
Does this medication interact with any other medication(s) on this list? (see rubric for further instruction)	Albuterol can cause arrhythmias, and MiraLAX can cause potassium and magnesium deficiencies, increasing the risk for life-threatening heart arrhythmias. Electrolyte levels should be monitored if excessive excretion of waste occurs or if the client starts to feel sudden dizziness, lightheadedness, shortness of breath, or heart palpitations (Drugs.com, 2025).
Lifestyle interactions:	Caregivers will need to avoid providing the patient with caffeine during periods of inhaler use as both increase heart rate (Drug.com, 2025).

(Daily tobacco use, alcohol, drugs, etc.)	
Does any of the client's past medical history contradict the use of this medication?	Nothing provided suggests an issue.
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)	The patient has a diagnosis of COPD and is likely utilizing the medication (a rescue inhaler) as a PRN med for flare-ups of bronchial constriction.
What would you teach the client about taking this medication? You must prioritize 2 (see rubric)	1. The patient's family will have to clean the device to prevent bacterial build-up that could then be inhaled. Discard devices if still in possession for more than a year. 2. The family will need to monitor heart rate and be sure to encourage the client to eat a banana or avocado on occasion to promote potassium levels, for which the medication will burn out of the bloodstream when it elevates heart rate after use (Nurse's Drug Handbook, 2024, p. 37).
How much would medication cost per month if paying out of pocket?	Assuming the client utilizes this medication once a day and assuming the standard of 2.5mg/dose, a 1-month supply of 2.5mg/3mL solution costs \$16.52. Cost will be higher if

	the clients takes it with greater frequency, but less proportionally as bulk options observed were associated with some savings. Cost otherwise unchanged (Drugs.com, 2025).
Drug # 5	Drug Name (Generic): Haloperidol Drug Name (Trade): Haldol Drug Class: Antipsychotic agent
How is the medication taken: (include dose, route, and frequency)	Oral concentrate (2mg/mL) (Drugs.com, 2025). Oral tablet (0.5 mg, 1 mg, 2 mg, 5 mg, 10 mg, 20 mg) (Drugs.com, 2025). IM/IV injection (2 mg/mL, 5 mg/mL) (Drugs.com, 2025). <i>This patient is prescribed 2 mg IM every 4 hours PRN for agitation.</i>
Specific Directions not included above:	Gather supplies, draw up 1 mL of the haloperidol 2 mg/mL vial, clean the injection site (deltoid muscle of the upper arm), administer the injection at a 90-degree angle over 10-15 seconds, and dispose of equipment (Nurse's Drug Handbook, 2023, p. 650).
Does this medication interact with any other	<u>Olanzapine (Zyprexa)</u> - CNS Depression, QT prolongation (Drugs.com, 2025).

medication(s) on this list? (see rubric for further instruction)	<u>Donepezil</u> - CNS side effects, motor function effects (Drugs.com, 2025). <u>Miralax</u>: Haloperidol carries a moderate potential reaction by causing arrhythmias, and laxatives can cause potassium and magnesium deficiencies increasing the risk for life-threatening heart arrhythmia. Electrolyte levels should be monitored if excessive excretion of waste occurs or if the client starts to feel sudden dizziness, lightheadedness, shortness of breath, or heart palpitations (Drugs.com, 2025).
Lifestyle interactions: (Daily tobacco use, alcohol, drugs, etc.)	Avoid alcohol due to the risk of sedation, stay hydrated, and do not take medications that have drug interactions with haloperidol (Drugs.com, 2025).
Does any of the client's past medical history contradict the use of this medication?	Older adults with dementia-related psychosis treated with this medication may be at increased risk for death (Drugs.com, 2025).
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)	An indication from this patient's past medical history includes physically combative behaviors during care and is only to be used as needed.

What would you teach the client about taking this medication? You must prioritize 2 (see rubric)	1. Seek immediate medical assistance if the patient is experiencing dizziness, extreme lethargy, slowed/difficult breathing, or unresponsiveness. 2. This medication can increase the risk of falls due to it causing orthostatic hypotension and motor and sensory instability (Nurse's Drug Handbook, 2023, pp. 651-652) .
How much would medication cost per month if paying out of pocket?	\$13.79 - \$89.89 for 5mg/mL haloperidol injectable solution. The average is \$51.84/month but depends on how often this medication is given. Alternatively, it would be worth discussing with the client's daughter whether the client's agitation is ever invoked by these IM injections. If not, it is still cheaper to maintain these injections at a monthly cost of \$22.32 after averaging out the \$18.60/50mL supply and assuming x2 doses a day. However, if injections are an agitation trigger, it may be worth considering a switch to oral solution to prevent this, but at an increased cost of \$68.34 / 30-day supply (assuming x2 doses a day, as med is PRN) when purchasing x4 15mL containers per month of 2mg/mL oral solution. Haloperidol: (Drugs.com, 2025)
Drug # 6	Drug Name (Generic): albuterol sulfate

	Drug Name (Trade): ProAir HFA Drug Class: Adrenergic bronchodilators
How is the medication taken: (include dose, route, and frequency)	Dose: For asthma or bronchospasm relief: 90 mcg per inhalation (1-2 puffs as needed). For exercise-induced bronchospasm prevention: 2 puffs 15-30 minutes before exercise. Route: Inhalation (inhaled through the mouth using the metered-dose inhaler). Frequency: As needed for sudden breathing difficulties, usually every 4 to 6 hours. Do not exceed 12 puffs in 24 hours unless directed by a doctor (Nurse's Drug Handbook, 2023, pp. 34-35). <i>This patient is prescribed 2 puffs via inhalation four times daily as needed.</i>
Specific Directions not included above:	To use the inhaler, follow these steps: 1. Remove the cap of the inhaler and shake well. 2. Breathe out fully.

	3. Place the mouthpiece between your lips and close your lips firmly around it. 4. Press down on the medication canister and inhale slowly. 5. Hold your breath for 5-10 seconds. 6. Exhale slowly. 7. Wait 1 minute between puffs (Nurse's Drug Handbook, 2023, p.35).
Does this medication interact with any other medication(s) on this list? (see rubric for further instruction)	<u>Colace & Miralax:</u> Albuterol can cause arrhythmia, and laxatives can cause potassium and magnesium deficiencies increasing the risk for life-threatening heart arrhythmias. Electrolyte levels should be monitored if excessive excretion of waste occurs or if the client starts to feel sudden dizziness, lightheadedness, shortness of breath, or heart palpitations (Drugs.com, 2025). <u>Donepezil:</u> Combining Donepezil with ProAir HFA may increase the risk of experiencing an irregular heart rhythm (Drugs.com, 2025). <u>Haloperidol:</u> Combining haloperidol with ProAir HFA may increase the risk of experiencing an irregular heart rhythm and may be life-threatening, especially with a

	history of cardiac issues (Drugs.com, 2025).
Lifestyle interactions: (Daily tobacco use, alcohol, drugs, etc.)	The patient should be cautious while using tobacco use and stimulant drugs as these may increase the likelihood of experiencing dangerous cardiac rhythms (Drugs.com, 2025).
Does any of the client's past medical history contradict the use of this medication?	The patient's history of chronic kidney disease may increase the effects of ProAir HFA due to the slower removal of medications from the body (Drugs.com, 2025).
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)	The most likely indication for the use of ProAir HFA for the patient's past medical history is her history of tobacco use. She may be experiencing long-term effects of smoking, such as bronchitis, emphysema, or asthma. Using an adrenergic bronchodilator helps open up the airways to relieve cough, wheezing, or troubled breathing.
What would you teach the client about taking this medication? You must prioritize 2 (see rubric)	1. This medication can cause paradoxical bronchospasms which makes the respiratory difficulties worse, so be cautious of this and seek immediate medical attention if it occurs. 2. Using this drug may increase the exaggeration of adverse reactions such as nervousness and sleeplessness. So while administering this to a patient with behavioral

	issues, be cognizant of the effects and do not exceed the prescribed dose (Nurse's Drug Handbook, 2023, p. 37).
How much would medication cost per month if paying out of pocket?	The average retail price of ProAir HFA (8.5 gm of 108 (90 base) mcg/act) = \$98.00 1 inhaler/month = \$98.00/month (Drugs.com, 2025). Considering this is an as needed (PRN) medication, the average monthly cost can vary depending on how often the patient is using it. If she used this inhaler 4 times a day and there are 200 puffs per canister, she would only need one inhaler per month.
Drug # 7	Drug Name (Generic): memantine hydrochloride Drug Name (Trade): Namanda Drug Class: N-methyl-D-aspartate (NMDA) antagonist/ Anti-Alzheimer drug
How is the medication taken: (include dose, route, and frequency)	Dose: For the starting dose, take 5 mg once daily. For a maintenance dose, gradually increase to 10 mg twice daily (or 28 mg once daily if using the extended-release form).

	Route: Oral (taken by mouth in tablet or liquid form) (Drugs.com, 2025). Frequency: Immediate-release tablets: Once or twice daily, depending on the dose. Extended-release capsules: Once daily. Can be taken with or without food. <i>This patient is prescribed 5 mg by mouth twice a day.</i>
Specific Directions not included above:	Do not divide or crush capsules. The capsules may be taken whole or sprinkled on applesauce (Drugs.com, 2025).
Does this medication interact with any other medication(s) on this list? (see rubric for further instruction)	<u>Donepezil:</u> These medications are frequently used together, but they have the potential to have conflicting effects on the brain (Drugs.com, 2025).
Lifestyle interactions: (Daily tobacco use, alcohol, drugs, etc.)	Namanda's effects may be increased when taken with foods that alkalinize the urine. Some of these foods include fruits high in potassium and citrate (lemons, bananas, pineapple, etc), and leafy green vegetables (Nurse's Drug Handbook, 2023, p. 842). Nicotine may also alter levels of the drug in the body, and the patient should be advised against the use of tobacco (Nurse's Drug Handbook, 2023, p. 842).
Does any of the client's past medical history	The patient's history of chronic kidney disease could create the potential for adverse

contradict the use of this medication?	drug effects. This medication should be used cautiously with CKD, and close monitoring of the patient is the best practice (Drugs.com, 2025).
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)	The indication for the use of Namenda for this patient is her diagnosis of Alzheimer's. This medication is only used for moderate to severe Alzheimer's dementia (Nurse's Drug Handbook, 2023, p. 841).
What would you teach the client about taking this medication? You must prioritize 2 (see rubric)	1. The client and her caregiver should be educated that Namanda is not a cure for Alzheimer disease. It may slow progression and help the patient maintain function, but it is not a cure (Nurse's Drug Handbook, 2023, p. 843). 2. The caregiver should be educated to monitor for adverse reactions using Namanda, especially since her kidney disease may not clear the drug from her system as quickly as it should. If adverse reactions do occur, seek medical attention promptly (Nurse's Drug Handbook, 2023, p. 842).
How much would medication cost per month if paying out of pocket?	The average cost for Namenda per month is \$388.36/month (Drugs.com, 2025).

	There is a generic version available which ranges from \$41.80 - \$153.49, which averages out to \$97.65/month (Drugs.com, 2025).
Drug # 8	Drug Name (Generic): ibuprofen Drug Name (Trade): Advil, Caldolor, Neoprofen Drug Class: NSAID Therapeutic Class: analgesic, anti-inflammatory, antipyretic
How is the medication taken: (include dose, route, and frequency)	Capsules, tablets, chewable tablets, oral suspension: Children 6 months and older: 20-40 mg/kg in 3 or 4 divided doses with a maximum 50 mg/kg daily. Children ages 12 and older: 200-400 mg every 4 to 6 hours PRN with a maximum 1.2 g daily. Adults: is most commonly 200-400 mg every 4-6 hours PRN. However, 300 mg x4 daily;

400, 600, 800 mg x3 or x4 daily with a maximum dose of 3.2 g daily can be administered.

Chewable tablets, oral suspension:

Children ages 2-3 weighing 11 kg-16 kg (24-35 lb): 100 mg every 6-8 hours PRN.

Children ages 4-5 weighing 16-21 kg (35-46 lb): 150 mg every 6-8 hours PRN.

Children ages 6-8 weighing 22-29 kg (48-64 lb): 200 mg every 6-8 hours PRN.

Children ages 9-10 weighing 27-32 kg (59-70 lb): 250 mg every 6-8 hours PRN.

Children age 11 weighing 33-43 kg (72-95 lb): 300 mg every 6-8 hours PRN.

Oral drops:

Children ages 6-11 months weighing 5.45-7.73 kg (12-17 lb): 50 mg every 6-8 hours PRN.

Children ages 12-23 months weighing 8.18-10.45 kg (18-23 lb): 75 mg every 6-8 hours PRN.

	Intravenous infusion (Caldolor): Children ages 6 months to 12 years old: 10 mg/kg infused over at least 10 minutes every 4-6 hours PRN with a maximum dose of 400 mg/single dose or 40 mg/kg or 2,400 mg daily (whichever is less). Adolescents: 400 mg infused over at least 10 minutes every 4-6 hours PRN with a maximum dose of 2,400 mg daily. Adults: 400-800 mg infused over at least 30 minutes every 6 hours PRN with a maximum dose of 3,200 mg daily. Intravenous infusion (Neoprofen): Gestational age 32 weeks or less and weighing between 500-1500 g: 10 mg/kg (based on birth weight) followed by 5 mg/kg 24 hours later and 5 mg/kg after the second dose infused over 15 minutes (Nurse's Drug Handbook, 2024, p. 681).
Specific Directions not included above:	Patients should take it with food or after meals with a full glass of water to reduce GI

	distress. Make sure the patient is in a sitting position for 15-30 minutes to prevent acid reflux. For oral solution and drops, make sure to shake the solution well and use a calibrated measuring device before administering dosage. Caldolor should be diluted to a final concentration of 4 mg/ml or less using 0.9% normal saline, 5% dextrose, or lactated ringer's. For an 880 mg dose, dilute 8 ml in at least 200 ml of diluent, 400 mg dilute 4 ml in at least 100 ml, 200 mg dilute 2 ml in at least 100 ml of diluent, and 100 mg dilute 1 ml in at least 100 ml of diluent. Diluted solutions may be kept at room temperature for 24 hours and infused at least over 30 minutes for adults and at least 10 minutes for children. Neoprofen does not contain preservatives, so discard any unused portion in the vial. Dilute with 0.9% normal saline or 5% dextrose and administer within 30 minutes of preparation. Administer via the I.V. port closest to the insertion site over 15 minutes. Total Parenteral Nutrition is incompatible in the same I.V. line and should be paused for 15 minutes before and after administration (Nurse's Drug Handbook, 2024, p. 682).
Does this medication interact with any other medication(s) on this list? (see rubric for further	<u>Donepezil</u>: donepezil has a minor risk when combined with ibuprofen increasing a

instruction)	possible chance for GI bleeding (Drugs.com). <u>Miralax</u>: carries a minor risk when combined with ibuprofen. Excessive bowel emptying can lead to an increase of electrolyte loss and dehydration. Ibuprofen can contribute to renal impairment, making the losses more excessive (Drugs.com, 2025).
Lifestyle interactions: (Daily tobacco use, alcohol, drugs, etc.)	Drinking alcohol while taking ibuprofen can increase the risk of a GI bleed (Drugs.com, 2025).
Does any of the client's past medical history contradict the use of this medication?	Ibuprofen is contraindicated for patients with chronic kidney disease because it can reduce blood flow to the kidneys and cause fluid retention, further putting strain on the kidneys (Drugs.com, 2025).
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)	The most likely reason for Caroline to be taking ibuprofen is to relieve pain due to osteoarthritis, a common ailment in women her age. Ibuprofen is also an OTC medication commonly used to treat aches and pains that can vary from day to day (Drugs.com, 2025).
What would you teach the client about taking this	1. This medication can increase symptoms of dysphagia after long-term use, and

medication? You must prioritize 2 (see rubric)	Caroline is already on a soft food/thick liquid diet due to difficulty swallowing (Drugs.com, 2025). 2. Caroline and her daughter need to be aware that this medication can increase the risk of GI bleeding, especially in the elderly, and since Caroline is 78 years old and likes to have a glass of wine every day with lunch, this would increase that likelihood (Drugs.com, 2025).
How much would medication cost per month if paying out of pocket?	Ibuprofen is an OTC medication given on a PRN basis. An oral solution of this medication is 100 mg/5 mL in 100 mL bottles costs \$11.01. Assuming the patient takes it once a day, this would put the cost at \$66.06/month (Drugs.com).
Drug # 9	Drug Name (Generic): Atorvastatin Drug Name (Trade): Lipitor Drug Class: Pharmacological: HMG-CoA reductase inhibitor Therapeutic: Antihyperlipidemic
How is the medication taken: (include dose, route, and frequency)	The initial dose is 10 to 20 mg PO once daily and titrated at intervals of 4 weeks or more according to lipid levels until therapeutic levels are reached. Maintenance dosage is 10

	to 80 mg once daily (Nurse's Drug Handbook, 2024, p. 121).
Specific Directions not included above:	This drug should be taken at the same time of day to maintain its effects (Nurse's Drug Handbook, 2024, p. 121). This medication can also be crushed and mixed with a substance for patients with dysphagia (Drug.com).
Does this medication interact with any other medication(s) on this list? (see rubric for further instruction)	This medication does not interact with any medications on this list (Nurse's Drug Handbook, 2024, p. 121), (Drugs.com, 2025).
Lifestyle interactions: (Daily tobacco use, alcohol, drugs, etc.)	You should avoid food high in fat or cholesterol while on this medication, as it will not lower lipid levels while still consuming high-cholesterol foods. Do not drink grapefruit juice with this medication, as it can increase blood levels (Nurse's Drug Handbook, 2024, p. 122).
Does any of the client's past medical history contradict the use of this medication?	This medication can cause the breakdown of muscle tissue, which can lead to kidney failure. This is more common in women, older adults, or people with kidney disease. Caroline has chronic kidney disease, and she is an older woman, which would greatly increase her risks with this medication (Nurse's Drug Handbook, 2024, pg. 123),

	(Drugs.com, 2025).
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)	Caroline has hyperlipidemia, and this medication is antihyperlipidemic (Nurse's Drug Handbook, 2024, p. 121).
What would you teach the client about taking this medication? You must prioritize 2 (see rubric)	1. The client should take this medication at the same time every day to ensure full therapeutic effects (Nurse's Drug Handbook, 2024, pg. 121). 2. The client should be aware of dietary considerations with this medication. A low-fat/cholesterol diet and no grapefruit juice is essential when taking this drug (Nurse's Drug Handbook, 2024, p. 122).
How much would medication cost per month if paying out of pocket?	The cost of this medication would be \$1,797.89 for 90 tablets. That would make the monthly cost \$1,198.59. However, with a coupon through Drugs.com, you can get 30 10 mg tablets for \$16.60 and 30 20 mg tablets for \$21.12. Taking one of each every day would allow for the 30 mg prescription costing \$37.72/month and save \$1,160.87.
Drug # 10	Drug Name (Generic): polyethylene glycol (PEG) 3350

	Drug Name (Trade): MiraLAX Drug Class: Pharmacological: Osmotic laxative Therapeutic: laxative
How is the medication taken: (include dose, route, and frequency)	Adults 17 years and older should take 17 g once daily on a PRN basis to relieve constipation, and it can take 1-3 days to take effect. This medication is taken as a capsule or powder form in a 4-8 oz solution to be given orally (Drugs.com, 2025).
Specific Directions not included above:	Make sure the powder is completely dissolved before consuming and do not take more than 7 consistent days. Consult a physician for children (Drugs.com, 2025).
Does this medication interact with any other medication(s) on this list? (see rubric for further instruction)	<u>Albuterol:</u> Miralax has a moderate potential reaction with albuterol. Albuterol can cause arrhythmias, and laxatives can cause potassium and magnesium deficiencies increasing the risk for life-threatening heart arrhythmias. <u>Haloperidol:</u> Haloperidol carries a moderate potential reaction by causing arrhythmias, and laxatives can cause potassium and magnesium deficiencies increasing the risk for life-threatening heart arrhythmia. Electrolyte levels should be monitored if excessive

	excretion of waste occurs or if the client starts to feel sudden dizziness, lightheadedness, shortness of breath, or heart palpitations (Drugs.com, 2025). <u>Ibuprofen:</u> Miralax carries a moderate risk when combined with ibuprofen. Excessive bowel emptying can lead to an increase of electrolyte loss and dehydration, and ibuprofen can contribute to renal impairment, making the losses more excessive (Drugs.com, 2025).
Lifestyle interactions: (Daily tobacco use, alcohol, drugs, etc.)	This patient has Alzheimer's disease with impaired ability to complete activities of daily living. This medication causes diarrhea, and the patient may have difficulty getting to the bathroom which would impair her dignity (Eliopoulos, 2022, p. 284).
Does any of the client's past medical history contradict the use of this medication?	This medication should be used cautiously for patients who have chronic kidney disease as it can potentially worsen kidney function and/or electrolyte imbalances (Drugs.com, 2025).
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	Older adults tend to have lower gastrointestinal motility and can get constipated more frequently. Advanced Alzheimer's disease can also increase potential for constipation by ignoring the urge to have a bowel movement or being unaware they need to have a

medication in general)	bowel movement (Eliopoulos, 2022, p. 122).
What would you teach the client about taking this medication? You must prioritize 2 (see rubric)	1. Take with caution as it can cause excessive electrolyte losses which could impair heart function, especially in patients with CKD. Electrolyte levels may need to be monitored if on long-term use (Drugs.com, 2025). 2. Do not exceed the recommended daily dose and do not take more than 7 days in a row (Drugs.com, 2025).
How much would medication cost per month if paying out of pocket?	This medication is a PRN medication, so the cost per month varies. On average, it costs about \$10/bottle for 119 g of powder for reconstitution, which would be 7 doses of medication (Drugs.com, 2025). Since she is already on a daily dose of Colace, she likely would not use this often, so one bottle would likely be enough for one month.

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

This client has severe dementia with combative behaviors. She also has a swallowing disorder and drinks alcohol daily. Her condition is highly complex and unusually early-onset, leaving her 8 years shy of the cutoff for social security. Her family also has a very limited and fixed budget, which restricts some options related to the client's care and requires her daughter to remain at home as a

full-time caregiver. Her expressive language has become very poor, which limits her ability to independently report on potential adverse drug reactions, and as such will require heightened awareness from caregivers to monitor for these.

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

The client, fortunately, does have a full time caregiver in the form of her daughter. The client may exhibit better retention of positive familiarity with family members, but having a caregiver with her full-time is the best scenario for the patient to maintain her medication regimen. Her allergies do not appear to pose an issue with any currently prescribed medications.

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)

Medication compliance will necessitate that her daughter personally track and administer all medications as directed to confirm consistent application. This has the added benefit of providing a consistent and familiar medication provider to the client to minimize combative complications with compliance. All medications on this list are fortunately available in liquid or chewable formulations, which would be advisable given her swallowing dysfunction. As such, in the drug pricing boxes above we have provided formulation changes to comport with the client's disposition. Some tablets and capsules were modified as needed to chewable/crushable or liquid forms to account for patients' swallowing disorder or to prevent potential agitation of aggressive behaviors from injections. Generic

options were also chosen to reduce the cost to the client.

The client's alcohol intake should be discussed with her daughter, and she should be educated on the contraindications this presents. Is this daily routine compulsory for the patient, or is it out of habit that the daughter provides this? Would the client recognize the removal of this ritual? Would she notice if the wine is replaced with a non-alcoholic substitute that allows maintaining the ritual without potentiating drug-alcohol interactions?

This client and her family would benefit greatly from a consultation with a social worker. It is likely that they would qualify for certain programs that would support their situation. Programs such as Supplemental Security Income (SSI), Medicaid, or potential nonprofits on the state or federal level could help with monetary struggles. Her daughter could also benefit from caregiver support programs that could provide respite care, so a great question for the healthcare team would be, “does this patient qualify for any federal or state caregiving assistance or respite care?” A social worker could also guide the client through setting up a GoodRx.com account that likely could further reduce her medication costs further than we have.

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

Nick's meds (#1-4)- Current = \$667.58 per month. New adjusted cost = \$118.64 per month. Savings of \$548.94/month.

Ben's meds - \$51.84 (Haldol) + \$98.00 (ProAir HFA) + \$388.36 (Namanda) = \$538.20/month.

Ashley's meds - \$37.72 (Lipitor) + \$10 (Miralax) + \$66.06 (Ibuprofen) = \$113.78/month

Total Monthly Cost - \$770.62

Reflective Statement of Experience:

While this assignment was labeled as “polypharmacy,” we were surprised to find that there wasn’t a significant amount of drug-drug interaction issues to resolve. While it was still a medication reconciliation experience, what we found interesting was that it was predominantly a trial in social work in disguise. It was interesting to see how advocacy for a client could dramatically change the level of desperation in their given situation. I imagine by the time we complete our final submission we will have experienced even more of the social work role and will be able to expand upon this reflection.

Calculating the drug costs for all of the patient’s medications really puts cost and necessity into perspective. Given that the patient has no income, paying for the medications can become a really difficult obstacle for her health. Luckily, the patient does have Medicare. The drug costs may be significantly lowered with her insurance, but it all depends on formulation and claim approval. Doing this polypharmacy exercise is a great learning experience on how complex maintaining a proper medication regimen can be.

References

- Docusate. (2025). *Drugs.com*. Retrieved March 23, 2025, from <https://www.drugs.com/price-guide/docusate>
- Donepezil. (2025). *Drugs.com*. Retrieved March 23, 2025, from <https://www.drugs.com/price-guide/donepezil>
- Eliopoulos, C. (2022). *Gerontological Nursing (10th ed.)*. Wolters Kluwer.
- Haloperidol. (2025). *Drugs.com*. Retrieved March 23, 2025, from <https://www.drugs.com/price-guide/haloperidol>
- Ibuprofen. (2025). *Drugs.com*. Retrieved March 23, 2025, from <https://www.drugs.com/price-guide/ibuprofen>
- Lipitor. (2025). *Drugs.com*. Retrieved March 23, 2025, from <https://www.drugs.com/search.php?searchterm=lipitor>
- Miralax. (2025). *Drugs.com*. Retrieved March 23, 2025, from <https://www.drugs.com/search.php?searchterm=MiraLAX&a=1>
- Nursing Drug Handbook. (2023). *2024 Nurse's Drug Handbook* (23rd ed.). Jones & Bartlett.
- Nursing Drug Handbook. (2024). *Nurse's Drug Handbook* (24th ed.). Jones and Bartlett Learning.
- Olanzapine. (2025). *Drugs.com*. Retrieved March 23, 2025, from <https://www.drugs.com/price-guide/olanzapine>

N322 Polypharmacy Grading Rubric

Criteria	Excellent 40 points	Acceptable 31-39 points	Unacceptable 0-30 points	Points Earned
Each drug should have a completed breakdown within the tables provided, which includes the following: ● Drug class ● Generic name ● Trade name ● How is the medication taken (include dose, route, frequency)	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
Criteria	Excellent 10 points	Acceptable 8-10 points	Unacceptable 0 - 7 points	Points Earned
Specific Directions not included above: ● Is there any type of medication on the patient list that have specific directions?	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	Student failed to answer the questions and/or the answers were inaccurate. (For each medication this question is	___/10

(before bed, before breakfast, 30 minutes before meals, etc..)		question if worth one point)	worth one point)	
Criteria	Excellent 0 points	Acceptable 16-19	Unacceptable 0-15 points	Points Earned
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? ● Do any of the medications interact with each other? (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)	All medications reviewed and student explained medication interactions.	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)	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)	___/20

Criteria	Excellent 5 points	Acceptable 4 points	Unacceptable 0 -3 points	Points Earned
Lifestyle interactions: ● What lifestyle factors counteract with the medications? (tobacco user, ETOH use – 3 beers daily)	Student showed knowledge why lifestyle would counteract with medications	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)	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)	___/5

Criteria	Excellent 10 points	Average 8-9	Unacceptable 0-7 points	Points Earned
Does any of the client's past medical history contradict the use of this medication?	Student showed knowledge why the client's past medical history would contradict the use of the medication(s).	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)	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)	___/10
Criteria	Excellent 10 points	Acceptable 8-9 points	Unacceptable 0-7 points	Points Earned
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)	Student showed knowledge of medications and what conditions corresponds with medications	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)	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)	___/10
Criteria	Excellent	Acceptable	Unacceptable	Points Earned

	20 points	16-19 points	0-15 points	
What would you teach the client about taking this medication? ● What education is needed for the medication? (For each medication listed the student must prioritize two topics for client education) (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)	Student showed the importance of medication education, and appropriate prioritized client education for the scenario provided.	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)	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)	___/20
Criteria	Excellent 10 points	Acceptable 8-9 points	Unacceptable 0-7 points	Points Earned
Is there anything about this medication regimen/ scenario that might indicate a potential difficulty in	Student had knowledge on why a patient would have difficulty with medication regimen	The student indicated some potential reasons that the client may have difficulty, however the student failed to	Student failed to answer the question OR the student indicated some potential reasons that the client may have	___/10

maintaining compliance with the orders as listed? ● Why would the patient have difficulty maintaining the medication regiment? (Please consider all factors in the scenario and all information provided within your chart – including cost, insurance, frequency of administration, etc)		indicate a reason OR an appropriate reason for some of the medications (This question is worth one point for each medication)	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)	
Criteria	Excellent 10 points	Acceptable 8-9 points	Unacceptable 0-7 points	Points Earned
Is there anything about this medication regimen/ scenario that might assist the client in maintaining the medication regimen as ordered? ● What factors are present to remain compliant? (Please consider all factors in the scenario and all information provided within	Student had knowledge on medication compliance	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)	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)	___/10

your chart – including cost, insurance, frequency of administration, etc.				
Criteria	Excellent 15 points	Acceptable 8-9 points	Unacceptable 0 points	Points Earned
● 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) ● What would the client's monthly out of pocket expense for all 10 medications?	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)	___/15
Criteria	Excellent 20 points	Acceptable 16-19 points	Unacceptable 0-15 points	Points Earned
The student must appropriately format the paper and include all of the following: ● Entire document must include appropriate citations,	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.	The document did not meet all of the criteria for formatting/ referencing. See "criteria" to the left for further breakdown.	The document did not meet all of the criteria for formatting/ referencing. See "criteria" to the left for further breakdown.	___/20

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) ● The student provided a rubric attached for grading (3 points) ● The student included the provided client scenario on page two of the document (2 points) ● The paper included a minimum of five references which were cited within the document (each reference with one citation is worth 5 points)				
Criteria	Excellent 20 points	Acceptable 16-19 points	Unacceptable 0-15 points	Points Earned
What suggestions might you	The student was able to identify	The student was able to	The student failed to answer the	____/20

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) Elaborate on this, explaining why you feel it should be addressed, why it is priority and provide evidence behind your presentation.	one potential idea or question to present to the prescriber or client. This question showed evidence of good critical thinking.	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.	question OR the student answered the question, however the students answer was dangerously inaccurate.	
Criteria	Excellent 10 points	Acceptable 8-9 points	Unacceptable 0-7 points	Points Earned
● Reflective statement of experience should include the following: -insight into the project itself (a specific example within the project and its	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 -insight into the project itself (a specific example within the project and its	Student failed to reflect on their project OR the student addressed only of the topics of reflection	___/10

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