

Lily Takes a Tumble: Polypharmacy in Older Adults

by

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Part I - Lily's Story

Lily loved spending her weekend afternoons playing outside with her grandchildren. At 76 years old, she sometimes found it challenging to keep up with the young children, but it filled her heart to connect with her family. Lily had many preexisting conditions that required multiple prescriptions to manage, including arthritis, high blood pressure, atherosclerosis, and anemia. Lily was independent and lived alone but was often visited by her family. Her son regularly tried to assist her in managing medications and medical appointments, but working full-time as a lawyer and caring for his children created some barriers.

Given the shortage of healthcare workers, Lily did not have a primary care physician, relying instead on walk-in clinics and emergency rooms visits for medical care. This often led to long wait times for appointments and difficulty coordinating consistent care. As a result, her medical management felt fragmented. Lily also found it difficult to keep track of all her medications. Some were required to be taken in the morning, some to be taken both morning and evening, and others only a few days a week. On days when her arthritis flared up, she found it painful to open the small pill bottles. Lily often mixed up her medication, the correct times or dosages, and sometimes skipped a dose. To add to this, Lily also took over-the-counter medications such as Advil and aspirin to manage her ongoing arthritis pain. This created excess stress for her and her son. In recent weeks, Lily had experienced bouts of dizziness and brain fog, and in the past, she had even had an episode of fainting. She insisted that this was normal for her and that she was fine.

Questions

1. Look at Lily's medication bottles (Figure 1, next page), prescriptions (Figure 2, next page), and the information provided above. What are some things you notice that can create potential challenges when it comes to managing her medication?

2. What are the possible short- and long-term complications of mismanaging medications?



Figure 1. Lily's medication bottles.

<p>Rx PHARMACY: <u>SMITH'S PHARMACY</u> ADDRESS: <u>123 FIRST STREET, UNIT A</u> PHONE: <u>XXX-XXX-XXXX</u></p> <p>PRESCRIPTION:</p> <p>JONES, LILY DOB: 02/28/1947</p> <p>(94) ACH-METHOTREXATE (METHOTREXATE), 2.5MG DIN: 02509067</p> <p>DR. JUN</p> <p>DISPENSE AS WRITTEN: <u>Y</u> REFILLS: <u>2</u></p> <p><i>[Signature]</i> 05/20/2012 Pharmacist Signature: Date:</p>	<p>Rx PHARMACY: <u>SMITH'S PHARMACY</u> ADDRESS: <u>123 FIRST STREET, UNIT A</u> PHONE: <u>XXX-XXX-XXXX</u></p> <p>PRESCRIPTION:</p> <p>JONES, LILY DOB: 02/28/1947</p> <p>(20) NORVASC (AMLODIPINE), 10MG DIN: 00878936</p> <p>DR. FERRARA</p> <p>DISPENSE AS WRITTEN: <u>Y</u> REFILLS: <u>5</u></p> <p><i>[Signature]</i> 03/15/2020 Pharmacist Signature: Date:</p>
<p>Rx PHARMACY: <u>SMITH'S PHARMACY</u> ADDRESS: <u>123 FIRST STREET, UNIT A</u> PHONE: <u>XXX-XXX-XXXX</u></p> <p>PRESCRIPTION:</p> <p>JONES, LILY DOB: 02/28/1947</p> <p>(28) NICOTINIC ACID (NIACIN), 300MG DIN: 00309737</p> <p>DR. ADAMS</p> <p>DISPENSE AS WRITTEN: <u>Y</u> REFILLS: <u>6</u></p> <p><i>[Signature]</i> 11/04/2018 Pharmacist Signature: Date:</p>	<p>Rx PHARMACY: <u>SMITH'S PHARMACY</u> ADDRESS: <u>123 FIRST STREET, UNIT A</u> PHONE: <u>XXX-XXX-XXXX</u></p> <p>PRESCRIPTION:</p> <p>JONES, LILY DOB: 02/28/1947</p> <p>(8) FERROUS FUMARATE, 300MG DIN: 00031089</p> <p>DR. BARLOWE</p> <p>DISPENSE AS WRITTEN: <u>Y</u> REFILLS: <u>4</u></p> <p><i>[Signature]</i> 05/05/2015 Pharmacist Signature: Date:</p>

Figure 2. Lily's prescriptions.

3. What potential challenges might arise with the son being Lily's only caregiver?

4. Compile a list of Lily's current medications by completing the table below using the figures and information given above, as well as the Merck Manuals, Drugs.com, and other trusted online resources.

Table 1. Lily's medications.

<i>Medication Name (Brands)</i>	<i>Dosage</i>	<i>Drug class</i>	<i>Indication(s) for Lily</i>
	Oral 10 mg, 1/day Avoid alcohol, do not take with grapefruit.	Calcium channel blocker	
	Oral 300mg, 3/day With or after meals.	Vitamin B ₃	
	Oral 150mg, 2/day Empty stomach with vitamin C.	Iron supplement	
	Oral 5 mg, 2/week Avoid caffeine and alcohol, take with folic acid.	Antimetabolite and antirheumatic	

Part II – The Doctor’s Office

One sunny afternoon, between joyful games of hide and seek with her grandchild, Lily went to the bathroom and experienced a burning sensation during urination and uncomfortable stomach pain. Concerned, her son immediately took her to a walk-in clinic.

The clinic was packed, a common occurrence in their community where a shortage of doctors and an overburdened healthcare system often resulted in long wait times and rushed appointments. After four hours, Lily was finally seen by Dr. Victor, a practicing physician for 25 years. Due to high patient volumes, Dr. Victor was scheduled with just 15 minutes for each person. Dr. Victor had never treated Lily before, and with limited time, began the appointment by asking Lily’s son what brought them in.

Dr. Victor: Why did you bring Lily into the clinic today?

Son: My mom is in pain when she goes to the bathroom. She probably has a UTI. She’s gotten them before.

Dr. Victor: Yes, that does sound like a UTI. I’ll prescribe antibiotics.

Son: Are you going to do any tests or examinations on my mother?

Dr. Victor: No, I see this all the time, especially in older women. I know how to fix it. This general antibiotic always does the trick. She’s had UTIs before, right? You said she’s dealt with them in the past.

Son: Yeah, she’s had a couple over the years, but it still seems a little concerning.

Dr. Victor: I understand your concern, but the antibiotics should clear it up. Follow the instructions on the medication bottle, and she should get better in no time.

Dr. Victor handed Lily’s son a prescription for trimethoprim-sulfa, a commonly used combination antibiotic for urinary tract infections (UTIs) and submitted her updated medical chart (Figure 3, next page). He then promptly left the room. Lily was left feeling confused and overlooked, as the doctor had directed his attention only to her son and did not acknowledge her directly. They had spoken about her potential UTI only amongst themselves, leaving Lily out of the conversation. The appointment also felt rushed, providing no opportunities for her to ask questions. They left with the prescription (Figure 4, next page), and Lily began taking the antibiotic according to the instructions on the bottle.

Questions

5. What could Dr. Victor have done to improve Lily’s experience with the appointment? How do you think Lily might be feeling at this moment? Use Dr. Victor’s medical chart (Figure 3, next page) to support your answers.
6. Why are older adults more vulnerable to being dismissed during medical appointments?
7. Dr. Victor did not go over the new antibiotics or previous medication with Lily. Explain some potential consequences.
8. What issues with the current healthcare system does Lily’s experience with Dr. Victor highlight? How could these issues vary depending on where Lily lives (e.g., urban vs. rural setting)?

Medical Chart					
					Date <u>02 / 17 / 2023</u>
PATIENT FIRST NAME Lily			LAST NAME Jones		
VITALS BP 135/95		T	P	R	GENDER Female
Height 163 cm	Weight 55 kg	BMI	O2	DOB 02 / 28 / 1947	
HISTORY OF PRESENT ILLNESS -History of UTIs - Patient has had 3 UTIs over the past 5 years			PHYSICAL EXAM -Pain and burning while urinating -Stomach pain -Dizziness -Fainting -Brain fog		
PAST MEDICAL HISTORY /			DIAGNOSIS -Common UTI, frequently experienced in patients in this age category -Likely caused by Escherichia coli bacteria (E.coli)		
ALLERGIES/MEDICATION HISTORY /			PLAN -Prescribed trimethoprim-sulfa (antibiotic), take twice daily for 7 days <input type="checkbox"/> Follow up No follow up needed		
Dr. Victor <i>[Signature]</i>					

Figure 3. Lily's medical chart.

Rx	Patient <u>Lily Jones</u>
	Address <u>Dr. Victor Walker in Clinic</u>
2 Rx: Sulfamethoxazole 800mg / 1x day oral susp. take w/ water	
Trimethyl sulfa x2/day Septa tablets 160mg x2/day take as labeled	
17 days total	
Date <u>02/17/2023</u>	Signature <i>[Signature]</i>

Figure 4. Prescription for Lily.

Part III – Lily Takes a Tumble

It had been four days since Lily started taking the antibiotics that were prescribed for her UTI. Her symptoms had subsided, and she was in less discomfort. Lily was enjoying a quiet morning alone in her apartment. It was a typical morning with a cup of green tea and a muffin alongside all her medications. After she called her son to confirm that he was coming over to help around the house, she stood up to go wash her dishes when she suddenly felt very dizzy, weak, and confused. After a moment, she collapsed to the floor. When her son arrived, he found her on the ground and immediately called an ambulance.

When Lily and her son arrived at the emergency room, she was introduced to Dr. Rose. Dr. Rose greeted Lily and inquired about Lily's medical condition. She pulled up Lily's patient records and was surprised at what she saw (see Figure 5, next page).

Dr. Rose: Oh my goodness!

Son: What? What's wrong?

Dr. Rose: Lily, are all these medications accurate? You take all of these, at these dosages, every day?

Lily: I think so. I sometimes get confused by everything and do my best to follow what other doctors have told me. If I'm having a particularly challenging day in terms of pain management, I'll take an aspirin from my cabinet too.

Dr. Rose: Lily, some of these drugs have harmful interactions with one another and are at high doses for you to be taking. I believe that you are experiencing something called polypharmacy, the concurrent use of multiple medications that can result in adverse side effects and harmful interactions. Polypharmacy is not uncommon in individuals above 65, which is because of the increased likelihood of older adults being on multiple medications for many different chronic conditions.

Lily: I'm confused—I've been prescribed all these medications to help my conditions by other doctors. What does this mean?

Dr. Rose: It just means that the doctors and pharmacists may have missed things in your chart—the dosages, timing, and the number of medications you are taking. We must carefully review your medications before making any modifications to your treatment plan. This includes over-the-counter medications as well. I'm also surprised the pharmacist didn't notice this since they usually review your medications using Beers criteria before dispensing a new one.

Lily: Goodness! I had no idea. All my medications are for different conditions, so I never imagined they could interact with each other! I've been to so many different pharmacies over the years, Dr. Rose, with all the moving around. I guess I just assumed they kept track of my medications. Maybe they didn't have all my information? I never thought to ask.

Son: Will she be okay? What can we do to fix this?

Dr. Rose: Lily, you'll be just fine. I'll refer you to a clinical pharmacist in our emergency department to review your medications with you. They will make necessary changes to minimize any risks or harms.

Questions

9. Explain the purpose of Beers criteria. Are any of Lily's current medications on these lists? Use resources, such as the tables in the AGS Beers Pocket guide or summary on Guideline Central.

MEDICAL HISTORY FORM

PATIENT NAME

Lily Jones	05/18/2022
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DATE of LAST UPDATE
CURRENT PHYSICIAN NAME

Dr. Michelle Ferrara	xxx - xxx - xxxx
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PHONE
CURRENT PHARMACY NAME

White Cross	xxx - xxx - xxxx
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PHONE
CURRENT and PAST MEDICATIONS

MEDICATION NAME	DOSAGE	FREQ.	PHYSICIAN	START	END DATE	PURPOSE
Trimethoprim & sulfamethoxazole (Trimethoprim-sulfa)	160 mg 800 mg	2/day 1/day	Dr. Victor	02/2023	-	UTI
Amoxicillin	250 mg	3/day	Dr. Barlowe	05/2021	06/2021	Inner-ear infection
Norvasc	10 mg	1/day	Dr. Ferrara	03/2020	-	Hypertension
Niacin	300 mg	3/day	Dr. Adams	11/2018	-	Atherosclerosis
Iron Supplements	1 tab	1/day	Dr. Barlowe	05/2018	-	Anemia
Amoxicillin	250 mg	3/day	Dr. Adams	10/2017	11/2017	UTI
Xanax	0.25 mg	3/day	Dr. Adams	05/2017	12/2019	Mild-Anxiety
Methotrexate	5 mg	2/week	Dr. Jun	05/2012	-	Arthritis

SURGICAL PROCEDURES

PROCEDURE	PHYSICIAN	HOSPITAL	DATE	NOTES
Appendectomy	Dr. Garcia	Trindale Hospital	05/1977	
Meniscus Repair	Dr. Ali	Rose Point General Hospital	03/2012	

MAJOR ILLNESSES

ILLNESS	START	END DATE	PHYSICIAN	TREATMENT NOTES
Arthritis	2012	Present	Dr. Jun	Had stiffness in hand and knee joints
Slight Vision Loss	2014	Present	Dr. Jun	Had issues with clarity of images
Anemia	2018	Present	Dr. Barlowe	
Atherosclerosis	2018	Present	Dr. Adams	
Hypertension	2020	Present	Dr. Ferrara	

Figure 5. Medical history form for Lily.

