Exercise

**Objective:** To practice identifying dynamic complexity in a patient care experience.

**Instructions**
1. Read the case study.
2. Review the system characteristics that contribute to dynamic complexity:
   - Change
   - Trade-offs
   - History dependency
   - Tight coupling
   - Nonlinearity
3. Explain how these system characteristics are expressed in the case study.

**Case Study**


Mrs. B was a 66-year-old widow living on a fixed income. She had been diagnosed with high blood pressure and osteoporosis. Her private doctor knew her well. When he selected the medication with which to treat her high blood pressure, he took into account her age, the fact that she had osteoporosis, and other issues. He chose a drug that had proven beneficial for patients like Mrs. B and that had minimum side effects. Mrs. B did well on the medication for ten years. Her insurance covered the cost of her medication, except for a small out-of-pocket copayment.

The last time Mrs. B went to her local pharmacy to refill her prescription, the pharmacist informed her that her insurance company had contracted with a PBM company. (The role of a PBM company is to perform a variety of cost-cutting services for health-insurance plans. One of these services is to decide which drugs an insurance company will pay for; the PBM company’s preferred-product list is known as a formulary.) If Mrs. B wanted to continue to take the same medication, it would cost her five times her usual copayment. She was quite disturbed because she could not afford this price increase and did not fully understand her insurance company’s new policy. The pharmacist offered to call Mrs. B’s doctor, explain the situation, and ask him whether he would change her prescription to the PBM-preferred brand. When the physician was contacted, he was not aware of the PBM company’s action and was not completely familiar with the preferred product. The pharmacist discussed Mrs. B’s
predicament with the physician and described the financial consequences of her continuing to receive her original prescription. After this discussion with the pharmacist, the physician concluded that his only option was to approve the switch, which he did.

Mrs. B began taking the new brand of high blood pressure medicine. One week after starting on the new drug, she developed a persistent cough that aggravated her osteoporosis and caused her rib pain. When the cough and pain continued for another week, Mrs. B began to take over-the-counter medicines for the pain. She unknowingly opened herself to having a reaction between her blood pressure medication and the pain medication: orthostatic hypotension (lightheadedness when rising from a lying to an upright position). One morning on her way to the bathroom, she fainted, fell, and broke her hip. She was admitted to the hospital for surgery, where she developed a urinary tract infection. The infection spread to her repaired hip, which resulted in a bloodstream infection that eventually led to her death.