Fran, a 68-year-old woman presented to the emergency department (ED) with massive upper intestinal bleeding. Despite all attempts to resuscitate her, she suffered irreversible brain damage, which led to withdrawal of life support. Further inquiry into the months preceding her death revealed an interesting chain of events.

At 68, having been remarkably healthy for her entire life, Fran thought she should probably go and get a check-up. Among the several clinical and laboratory tests ordered by her family practitioner, her blood pressure was noted to be marginally above the target for her age. Her family physician suggested that she reduce her weight by both exercising more regularly and modifying her diet. She was advised to return in three months for a follow-up appointment. Three months later, and visibly thinner, she proudly announced that she had lost 20 lbs, modestly remarking that losing weight had not been difficult. Concerned that the weight loss had, perhaps, been too easy, her family physician recommended a CT scan to look for more sinister causes of weight loss (“just to be safe”). The CT report was shocking; it identified a “3.8 cm mass in the head of the pancreas.” A hepatobiliary surgeon, consulted urgently, believed that this was surely an early malignancy that, fortunately, had not spread; an urgent Whipple’s procedure was scheduled. The surgery went well considering the extent of the intervention. Fran’s post-operative course was complicated by multiple pulmonary emboli and a gastrointestinal bleed, which required an inferior vena cava filter and kept her in the hospital longer than had been anticipated. She stabilized, however, and was discharged home on warfarin two weeks after the surgery.

The pathology report indicated the absence of a mass lesion or any evidence of malignancy.

Four days after discharge, the patient presented to the ED complaining of nausea and vomiting. Her urine dipstick test was positive only for a trace amount of blood. While perusing her inpatient records, however, her attending physician found that *Escherichia coli* had been identified during a routine urine culture, and he thought it prudent to treat her symptoms as a urinary tract infection, prescribing a course of antibiotics.
Both the physician and pharmacist apparently failed to note that she had already been prescribed warfarin. The urine culture ordered at that visit was subsequently negative.

**Ulysses syndrome:** When a healthy person suffers from a false positive abnormal result that leads to a chain of events with more and more investigations, chasing any unlikely diagnosis that may have been suggested by the original test result.3

The following day, Fran returned to the ED with massive hematemesis, which precipitated a cardiac arrest and her subsequent death. Her international normalized ratio (INR) was 6.

**Introduction to Ulysses Syndrome**

In 1971, two Canadian academics, apparently ahead of their time, published two papers in the *Canadian Medical Association Journal* critically examining the use of screening tests in medicine.1,2 In a subsequent, somewhat tongue-in-cheek editorial, Dr. Mercer Rang, an Ontario surgeon, described what he called the Ulysses syndrome. The principle feature, according to the author, is when a healthy person suffers from a false positive “abnormal” result that leads to a chain of events with more and more investigations, chasing any unlikely diagnosis that may have been suggested by the original test result.3 He compared the syndrome to the journeys and experiences of Homer’s Ulysses (Odysseus in Greek), who took a long and convoluted trip back to Ithaca after the Trojan wars. Although his many adventures, which involved killing many dangerous monsters and blinding a Cyclops, made good reading, the harrowing detours were unnecessary and kept him from getting home for another 10 years. In his column, Rang makes a distinction between iatrogenic illness, which complicates medical therapy, and this syndrome, which is a side effect of investigation. He also suggested that it was a benign syndrome; this was not the case for Fran.2 In this time of Choosing Wisely™ and soaring health care expenditures, it is time to revisit his concerns.4

**Clinical Implications of Ulysses Syndrome**

Admitting that it is easy to comment after the fact, it appears that, in Fran’s case, marginally necessary advice (depending on your viewpoint) led to an unnecessary test, which then precipitated unnecessary major surgery. This resulted in a serious complication that required medication with a narrow therapeutic index. A subsequent antibiotic prescription, which was most likely unnecessary,
interfered with the medication Fran had been prescribed to manage her surgical complication and, ultimately, contributed to her bleeding to death.

Although it has been suggested that 88% of medical diagnoses are made based on history and physical examination alone, medical testing has become an expected part of routine care. Often, people with vague and benign sounding symptoms are referred for blood tests to “see if there is anything bad going on.” Doctors are often considered thorough for doing a lot of tests. Patients feel valued or rewarded when physician order tests. Patients may even be inclined to help out when it comes to their investigations. A rheumatologist recently remarked on receiving results that she had not ordered; the patient had apparently checked some extra tests off on the request forms, likely on the advice of a vaguely targeted internet search.

Medical interventions that are not needed also consume resources that could be used to help other people. As illustrated in Fran’s case, unnecessary tests can have serious consequences. The tests themselves may appear benign, but when ordered without serious consideration, they may trigger a long chain of testing and treating, which, once initiated, is very challenging to stop.

It is easier and more gratifying to do things than to show restraint. Patients often make such comments as “I have waited three hours to hear you tell me that you are not going to give me anything for my bronchitis.” It is far easier to just keep such patients happy by ordering an x-ray that might show a small nodule that leads to worry and more radiation or by prescribing a useless antibiotic that may cause diarrhea or a rash.

As physicians, we have the ability to reduce suffering and worry and to improve and prolong life. We do, however, have to resist letting the potential benefits of our decisions outshine the risks — even the questions we ask may not be benign and could begin some stressful and fruitless barrage of tests. The Choosing Wisely™ campaign could not have come too soon; let’s use it to cultivate a culture where we think more carefully about what we can do and what we should do, discussing these choices with patients as often as we can.

References

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This is one of two articles dedicated to the memory of Leslie Ann Walsh, our patient who died of a gastrointestinal hemorrhage associated with a number of medical interventions.