Story from the Front Lines:
My new patient was 60 years old and took only three medications: an anti-depressant, a Vitamin D supplement, and a bisphosphonate – the latter aiming to prevent bone fractures.

She was, by most reasonable measures, a healthy woman, and our first conversation, late in the afternoon on the first day of spring, initially revolved around the reasons for her move to Colorado, about her family, and about how what they say is true – in Denver, there really are 300 days of sunshine every year.

She had moved to Denver to spend more time with her daughters and her two grandchildren. Clearly, the day-to-day quality of her life was something she valued immensely.

Our conversation soon centered on a series of medical questions – and near the end of the visit, a source of potential conflict arose.

“Today I would like a screening EKG and a urinalysis,” she said.

“A urinalysis?” I asked.

“To make sure I’m not spilling protein,” she replied, matter-of-factly. “My previous doctor made sure to screen me every year with basic labs, a liver function panel, an EKG, a mammogram, a DEXA scan, a lipid panel, and a urinalysis.”

Teachable Moment:
The United States spends more on health care per capita than any other nation on Earth -- $8,233 per person in 2010. In 2011, the Institute of Medicine cited $765 billion – or 30 percent of U.S. healthcare costs – as the figure that can be attributed to inappropriate or unnecessary tests, treatments and other services.

2011 was also the same year that the U.S. Preventive Services Task Force (USPSTF) published its report on the evidence for screening asymptomatic adults with a resting or exercise electrocardiography (ECG) – a report that explored, among other issues, the effects of screening for abnormalities on electrocardiography, compared with no screening, on coronary heart disease outcomes.

Certainly, the direct harms of the resting or exercise ECGs are minimal. For example, the overall risk for patients undergoing a screening exercise ECG experiencing sudden death or an event that requires hospitalization has been estimated to be 1 per 10,000 tests. But the potential for downstream harm is real and even possible to estimate. Based on the data of a study cited in the USPSTF’s recommendations, approximately 1.7 percent of patients undergoing a screening ECG subsequently underwent coronary angiography and
0.5 percent of patients underwent revascularization – despite no evidence supporting this in asymptomatic patients.

Other data based on large, population-based registries suggests that the risk for any serious adverse event – including death, stroke, or myocardial infarction – as a result of angiography is about 1.7 percent. Note that this does not include the risk of radiation exposure from coronary angiography, CT angiography, and myocardial perfusion imaging – or of bleeding, of contrast allergy, or of contrast nephropathy.

Put a simpler way, based on this data, if one million asymptomatic patients received a screening ECG, 17,000 patients may undergo coronary angiography. Of those 17,000, the number expected to undergo a revascularization would be 85 people. And the number expected to suffer a serious adverse event – such as death, stroke, or an MI – would be almost three-and-a-half times as many: 289.

As individualized as the practice of medicine is, no medical decision is made in a vacuum – physicians who recommend a screening ECG to one asymptomatic, healthy patient are likely to make that recommendation to other asymptomatic, healthy patients. A $100 ECG, including the interpretation fee, multiplied on a population scale takes little time to contribute to that number of 765 billion wasted dollars – especially when one considers, for instance, screening urinalyses as well. A study published in the *Journal of the American Medical Association* in 1989 showed that four population-based studies have found that fewer than 1.5 percent of patients with positive urine dipsticks for proteinuria have a treatable disorder – essentially producing over 98 false positives per 100 asymptomatic, healthy patients with proteinuria.

After a lengthy discussion, we agreed that subjecting her to a screening ECG, urinalysis, or similarly low value tests was not necessary. After all, spending time with her daughters and grandchildren was the most important goal for this healthy 60-year-old woman, my new patient.

Quality of life, time spent with family and in good health, is of course vital – but it’s also obtainable, especially for people who have the good fortune to enter their sixth and seventh decades without debilitating chronic medical problems. Unnecessary tests beget unnecessary follow-up tests – and, as a result, more time spent inside the walls of clinics and hospitals.

Places where there certainly aren’t 300 days of sunshine.

References


