Routine PSA Screening May Do More Harm Than Good

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Hi, everyone. I'm Dr Kenny Lin. I am a family physician and associate director of the Lancaster General Hospital Family Medicine Residency, and I blog at Common Sense Family Doctor.

At the end of October, the European Randomized Study of Screening for Prostate Cancer (ERSPC), which followed patients for a median of 23 years after prostate-specific antigen (PSA) screening, reported that the relative risk of dying from prostate cancer in the screening group was 13% lower than in the control group, with a number needed to screen of 456 to prevent one prostate cancer death. A few weeks later, however, the United Kingdom National Screening Committee made a draft recommendation against routine PSA screening, including in Black men and men with a family history of prostate cancer. Cynical observers of the UK's National Health Service might view this apparent disconnect as an example of a socialized health system rationing care. But not only did the UK make the right call on PSA screening, the US would do well to follow its example.

Combining the ERSPC's results with those of another study that found a small mortality benefit 15 years after a single PSA test, it is reasonable to conclude that screening prevents some prostate cancer deaths. The question is, at what cost?
Cancer Research UK created a useful infographic based on a best-case scenario model of prostate cancer screening outcomes. Of 1000 men in their 50s who receive PSA screening, 100 will have a positive test, 34 of those will undergo a biopsy based on a positive MRI, 28 will be diagnosed with prostate cancer, and two will avoid dying from prostate cancer. On the harms side, 20 men will be over-diagnosed — that is, prostate cancer would not have caused symptoms during their lifetimes. And even though these men would not have had symptoms, 12 will receive surgery or radiotherapy, nonetheless. So, for every death prevented by PSA screening, 10 men will be unnecessarily diagnosed with prostate cancer, six will receive unnecessary treatment, and three will develop urinary incontinence, erectile dysfunction, or both from being treated.

According to the American Cancer Society, prostate cancer incidence in the US has increased by an average of 3% annually from 2014 through 2021, while mortality has been stable among men aged 55-69 years. In 2018, the US Preventive Services Task Force (USPSTF) endorsed individualized decision-making for PSA screening for men in this age group. Its recommendation is being updated, but it is uncertain when the new statement will be released given the political upheaval that has led to the USPSTF's past two meetings being cancelled.
I have previously argued that family physicians should discourage PSA screening for most men because the selective testing approach of the USPSTF and other guidelines "has not moderated high rates of testing among those least likely to benefit and most likely to be harmed by overdiagnosis and overtreatment."

Although MRI-guided biopsies and greater use of active surveillance in initial management have decreased harms from screening, overtreatment of prostate cancer remains common in the US. Not

everyone diagnosed with low-risk prostate cancer qualifies for active surveillance, and a majority of men who do will eventually be treated, resulting in adverse effects that impair quality of life. Even if it were possible for PSA screening to prevent 100% (rather than 13%) of prostate cancer deaths, the odds of an individual experiencing more good than harm would remain low. An analysis of three decades of data from the national prostate cancer registry of Sweden found that men with localized prostate cancer were up to 6 times more likely to die of other causes, and that other causes of death were more likely even in men with very high-risk prostate cancer and remaining life expectancies of 15 years or more.

In the absence of a current USPSTF recommendation, the UK's evidence-based guideline on PSA screening should guide American primary care practice.

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