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Optimizing screening decisions

January 2018

Story from the front lines:

A man in his 70s with diabetes, CKD, tobacco abuse who presented to clinic for his Medicare annual wellness exam. He lives alone and is able to perform all of his ADLs independently. He can walk several blocks without difficulty. He has not been hospitalized in the past year. When discussing preventative care, the patient stated he only wanted to schedule the "must do" screening tests. In this 72 y/o man with multiple medical co-morbidities, what screening tests are appropriate and as he ages, when is it appropriate to stop screening?

Teachable Moment:

Prevention is a mainstay in primary care, identifying and treating conditions before symptoms develop. However, prevention can also cause harm to older adults by identifying and treating conditions that are unlikely to cause symptoms in the individual's lifetime.[i] Older adults with limited life expectancy are frequently screened for cancer even though the risks of screening outweigh the benefits in such patients.[ii] Navigating screening guidelines, which have differing age cut-offs for different tests, is challenging, and can be a delicate topic as patients age and near end of life. Therefore, it is important for physicians to have a framework for discussing prevention and screening with their patients.

When considering screening tests, physicians should consider life expectancy together with the benefits and risks of different screening tests. One approach is to compare the patient's life expectancy (LE) with the screening test's time to benefit (TTB). TTB is the time between the performance of a preventive intervention and the time when health outcomes improve.[iii] When LE is substantially longer than TTB, the intervention should be recommended as it is likely the intervention will benefit, rather than harm, the patient. Conversely, if the LE is shorter than the TTB, the intervention should not be recommended, as it is not likely to benefit the patient, and may actually cause harm. For example, the TTB for screening mammography is 10.7 years to prevent 1 breast cancer death for 1,000 women screened. If a patient's life expectancy is greater than 10 years, that patient would likely benefit from screening mammography. However, if the patient's life expectancy were only 5 years, the patient will likely not see benefit from screening and may actually be harmed by testing, leading to additional testing or treatment that would not extend the patient's life.[iii] Physicians should ask, how much will it help and when will it help, before ordering screening tests on the elderly.

Many guidelines use age as a criterion to stop screening, but life expectancy is a more accurate tool. Estimating LE can be done by reviewing US life expectancy tables grouped by age and sex.

Life expectancy tables often include healthiest (75%) and least healthy (25%) quartiles and can be incorporated into a decision on screening.[i] Life expectancy can also be estimated with existing mortality indexes, such as ePrognosis.com, an online calculator developed at UCSF which compiles and translates mortality indices.[iii]

One challenge all physicians face is how to discuss screening cessation with elderly patients. One study of older adults found that patients supported using age and health status to individualize screening but often did not understand the role of life expectancy, as they believed lift expectancy is difficult to predict. This study found that specific wording was important, for example, patients preferred being told "this test would not help you life longer" rather than "you may not life long enough to benefit from this test."[ii] Training physicians on how best to have these difficult conversations would likely help cut down on unnecessary screening in elderly patients.

Let's now focus on the patient described above. His life expectancy based on US life table data is 8.4 years and the Schonberg Mortality Index places his 5 year mortality at 37% and 10 year mortality at 60%. What screening tests should be recommended to this patient? The time to benefit for colorectal cancer screening, prostate cancer screening, and intensive glycemic control in DM are all 10 years. Given the patient's life expectancy is less than 10 years, I would recommend against screening for colon or prostate cancer and would relax my A1c goal to 8% in this patient. In contrast, the TTB for primary prevention with statins is between 1.5-5 years, therefore this patient may benefit from statin therapy. By considering a patient's life expectancy and time to benefit before offering preventive interventions, while also taking into account the patient's preferences, physicians can ensure their patient's receiving individualized preventative medicine.

References:

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[iii]Lee, S. J. and Kim, C. M. Individualizing Prevention for Older Adults. *J Am Geriatr Soc*. Nov; 2017. doi:10.1111/jgs.15216