Interactive Tools to Assess the Likelihood of Death

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New online tools to help determine life expectancy may influence how doctors treat and prescribe drugs for the elderly.

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To help prevent overtesting and overtreatment of older patients — or undertreatment for those who remain robust at advanced ages — medical guidelines increasingly call for doctors to consider life expectancy as a factor in their decision-making. But clinicians, research has shown, are notoriously poor at predicting how many years their patients have left.

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Now, researchers at the University of California, San Francisco, have identified 16 assessment scales with "moderate" to "very good" abilities to determine the likelihood of death within six months to five years in various older populations. Moreover, the authors have fashioned interactive tools of the most accurate and useful assessments.

On Tuesday, the researchers published a review of these assessments in The Journal of the American Medical Association and posted the interactive versions at a new Web site called ePrognosis.org, the first time such tools have been assembled for physicians in a single online location.

"We think a more frank discussion of prognosis in the elderly is sorely needed," said Dr. Sei Lee, a geriatrician at U.C.S.F. and a co-author of the review. "Without it, decisions are made that are more likely to hurt patients than help them."

Dr. Lee and his colleagues cautioned that while the best assessments are reasonably accurate, there is insufficient data on whether using them improves patient care in clinical settings. The researchers stopped short of urging widespread use.

At present, physicians are often shooting in the dark when they recommend tests, treatments and medications for older patients. Older bodies respond differently than younger ones to drugs and operations, many of which are never evaluated in elderly populations.

Even when interventions do work, the benefits can be years away. Doctors have no easy way to know whether their elderly patients will live long enough to experience them. The potential for complications and side effects, however, is immediate.

Plugging individual variables — age, health conditions, cognitive status, functional ability — into one of the new online tools produces a percentage indicating the likelihood of death within a particular time frame. Some assessments are used for hospital patients or nursing home residents, others for elderly people still living at home.

"That kind of synthesis is very helpful for providers, researchers, some patients — a one-stop shop," said Dr. Susan L. Mitchell, a Harvard geriatrician and senior scientist at Hebrew SeniorLife in Boston, who was not involved in the project.

The results could help doctors and families evaluate, for example, whether an older person with a terminal disease should consider hospice care, Dr. Lee said.

Medicare regulations require that hospice patients have a prognosis of six months or less, but most patients do not turn to hospice until they are within a few weeks or days of death, when there is little time to provide full medical and psychological support.

At ePrognosis.org, physicians can consult the Porock index, used for assessing life expectancy in long-term nursing home residents. The index indicates, for example, that a man in his late 80s with congestive heart failure, failing kidneys, weight and appetite loss, declining cognitive ability and the need for extensive assistance has a 69 percent chance of dying within six months.

Doctors and family members could reasonably conclude that such a person is a candidate for hospice without fearing that they have jumped the gun.

The assessments might also be helpful in determining how vigilant an older person with Type 2 diabetes must be about maintaining very low blood sugar, said Lindsey Yourman, now an intern at Scripps Mercy Hospital in San Diego and lead author of the review.

Keeping blood sugar below 7 percent on the commonly used A1C hemoglobin test can lower diabetics' risk of complications like kidney disease. But it can take eight years or longer of daily monitoring, dietary restrictions, exercise and medications for that protective effect to appear.

"Say an older patient is tired of having to be so meticulous and attentive to blood sugar all the time," Dr. Yourman said. "If she's unlikely to live for five years, it's questionable whether she will really benefit from tight glycemic control."

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With an accurate idea of how long the patient might live, her physician might decide her quality of life will improve with less stringent measures to manage diabetes, Dr. Yourman said.

Despite the new tools' shortcomings, Dr. Yourman added, "they don't have to be perfect to be better than what's already happening."

The authors debated whether to give the public access to ePrognosis, fearing that nonprofessionals might misinterpret the information or fail to consider how their own situations vary from those of various study populations.

The tools are available to anyone who checks a box saying he or she is a health care professional; there is no verification.

"As with any scientific data," cautioned Dr. Mitchell of Hebrew SeniorLife, "it needs some explanation of the accuracy of these prognostic tools. Some are better than others, and none are perfect. The public needs to understand that."

In the end, the authors decided that creating barriers to public use would make ePrognosis less useful for physicians as well. They also wanted to bring the public into the discussion.

"This is a philosophical question," said Dr. Lee, who described a trend toward better-informed patients participating in health care decisions. "In general, patients having more information is a good thing."

This article has been revised to reflect the following correction:

Correction: January 10, 2012

A previous version of this article misstated the name of the hospital where Lindsey Yourman is an intern. It's Scripps Mercy Hospital, not Scripps Murphy Hospital.

A version of this article appeared in print on January 11, 2012, on page A14 of the New York edition with the headline: Interactive Tools Used to Assess the Likelihood of Death.

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