

# Model predicts dialysis patients' likelihood of survival

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This is a picture of Michael Germain, M.D., co-author of the study. Credit: none

A new model can help physicians determine if a kidney disease patient on dialysis is likely to die within the next few months, according to a study appearing in an upcoming issue of the *Clinical Journal of the American Society Nephrology (CJASN)*. This clinical tool could help medical professionals initiate discussions with patients and their families about end-of-life care such as hospice.

Some kidney disease patients on dialysis are very ill and long-term survival is not anticipated. Because dialysis can be tedious and cause medical complications, patients who know that they likely have only a short time to live may wish to consider alternatives such as stopping

dialysis. Unfortunately, doctors have not had accurate ways to predict dialysis patients' likelihood of long-term survival.

Michael Germain, MD; Lewis Cohen, MD (Baystate Medical Center); and their colleagues designed a model to help physicians assess the likelihood of long-term survival for these very ill patients. The investigators derived their model after studying 512 kidney disease patients on dialysis. One major component of the model is a doctor's estimate of prognosis, called the "surprise question." (Would you be surprised if your patient died in the next six months?) The model also takes into consideration a patient's nutritional status, age, and additional illnesses or conditions.

Five simple factors: a 'no' answer to the surprise question, older age, decreased serum albumin, presence of [dementia](#), and presence of peripheral vascular disease (blockage of an artery that leads to an arm or a leg), could be mathematically combined to accurately predict that a patient is unlikely to survive past six months. When comparing a patient who died within six months with one who remained alive, 87% of the time the model accurately predicted that the former patient had a higher risk of dying within that timeframe than the latter. The researchers validated their model by testing its accuracy in another 514 kidney disease patients on dialysis, where the model's predictive accuracy was only slightly lower (80%).

Discussing a [kidney disease](#) patient's likelihood of dying can help seriously ill patients and their families make informed clinical decisions: some will decide to stop [dialysis](#) and start hospice care, while others may prefer continuing vigorous treatments to prolong life as long as possible. "Terminal care is complicated and it is always preferable if decisions can be discussed in advance, goals established, and decisions reached collaboratively between patient and physician," said Dr. Germain.

More information: The article, entitled "Predicting Six-Month Mortality in Patients Maintained with Hemodialysis," will appear online on December 3, 2009, [doi:10.2215/CJN.03860609](https://doi.org/10.2215/CJN.03860609)

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