

Study may help Department of Veteran's Affairs find patients with high risk of suicide

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Clinicians are challenged every day to make difficult decisions regarding patients' suicide risk. Using Veterans Health Administration (VHA) health system electronic medical record data, Veterans Affairs (VA) and National Institute of Mental Health (NIMH) scientists were able to identify very small groups of individuals within the VHA's patient population with very high, predicted suicide risk—most of whom had not been identified for suicide risk by clinicians. Such methods can help the VHA to target suicide prevention efforts for patients at high risk, and may have more wide-ranging benefits.

John McCarthy, Ph.D., M.P.H, and colleagues report their findings today in the online issue of *American Journal of Public Health*. This paper is the result of a collaboration between the VA and NIMH, which is part of the National Institutes of Health.

Dr. McCarthy and colleagues developed their suicide-risk algorithm by studying the VHA patient population from fiscal years 2009-2011. Data on manner of death came from the National Death Index, and predictors of suicide and other types of death came from VHA clinical records. Dividing randomly the patient population in half, the team used data from one half to develop the [predictive model](#), and then tested the model using data from the other half. Each of the two study samples included 3,180 suicide cases and 1,056,004 control patients. Researchers compared predicted suicide risk to actual mortality to assess the performance of the predictive model.

"As the largest health care provider in the U.S., VA has the responsibility to continuously examine how our extensive suicide prevention efforts are working, and to identify critical opportunities for improvement in service to our nation's Veterans," said Dr. Caitlin Thompson, deputy director for suicide prevention for VA. "This collaborative effort with NIMH provides us with unprecedented information that will allow us to design and implement innovative strategies on how to assess and care for those Veterans who may be at high risk for suicide. This model will advance the care provided to Veterans through VA's suicide prevention programs to allow us to better tailor our [suicide prevention](#) efforts so that we can ensure that ALL Veterans remain safe."

The VHA care system identifies patients as being at high-risk of suicide based on information assessed during clinical encounters. Researchers found that their predictive model was more sensitive than this clinical flagging, in the sense that, even in groups with the highest predicted suicide risk based on the model, less than one-third of patients had been identified clinically.

"This is valuable, because it gives the VA more extensive information about suicide risk," said Michael Schoenbaum, Ph.D., senior advisor for [mental health](#) service, epidemiology and economics at NIMH and one of the co-authors of the report. "If the VA can identify small groups of people with a particularly high-risk of suicide, then they can target enhanced prevention and treatment services to these highest-risk individuals,"

"It's particularly encouraging that these analyses use the types of data available to any large health care system," said NIMH Director Thomas Insel, M.D. "These methods could help us prevent civilian as well as veteran suicides."

In addition to identifying suicide risk, the team looked at deaths among people identified as highest risk for suicide in 2010. The team found that this group had both very high suicide and non-[suicide](#) death rates over the next 12 months.

"This finding reinforces the idea that using this process to target [suicide risk](#) interventions may have wide benefits across an extended span of time," concluded Dr. Schoenbaum.

More information: "Predictive Modeling and Concentration of the Risk of Suicide: Implications for Preventive Interventions in the US Department of Veterans Affairs." *American Journal of Public Health* (in press).

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