Suicide Prediction Modeling

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Suicide prediction modeling analyzes complex demographic and health data, sometimes from a variety of sources, to identify individuals at risk for suicide. Opportunities to develop more effective suicide prediction models have increased due to wider availability of large health care data sets and advances in artificial intelligence.

To determine whether the classification accuracy of suicide prediction models has improved, researchers conducted a systematic review of 17 studies that used 64 different models. They found that many of these studies used a patient population with increased suicide risk, limiting the generalizability of their findings to other patient groups and health systems. The predictive validity of a positive result for suicide death was very low (0.01) for most models. The researchers developed simulation models of the results, which suggested that suicide prediction modeling produces a very large number of false positives.

The current performance of suicide prediction models indicates limited practical ability to predict suicide attempts and deaths. The authors suggested health care leaders weigh these limitations before using suicide prediction models in health systems.


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