



Using Electronic Health Records to Predict Suicide Attempts and Deaths in Outpatient Care

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Electronic health record data, combined with responses to self-report questionnaires, may be able to predict risk of suicide attempt and death in the 90 days after a mental health or primary care visit. While prediction models cannot replace clinical judgment, these findings suggest that risk models can help inform provider efforts to prevent suicide among those at risk.

Using data on 20 million outpatient visits by three million patients in seven health care systems, researchers examined the following:

- Demographic characteristics, such as age, sex, race, insurance type, and educational attainment
- Clinical characteristics, such as a current or past behavioral health diagnosis and prior inpatient or emergency mental health care visit
- General medical diagnoses
- Scores on the Patient Health Questionnaire (PHQ-9)—available for 15 percent of visits—a tool that screens for, diagnoses, and measures the severity of depression

The researchers used electronic health records and insurance claims to find diagnoses of self-harm or probable suicide attempt, and state mortality records to find information on suicide deaths.

They found that the strongest predictors of suicide attempt or death varied slightly depending on whether the patient visited a primary care or mental health care setting, but generally included mental health and substance use diagnoses, the use of emergency or inpatient mental health care, and history of self-harm. Although PHQ-9 scores were not available for all cases, they also demonstrated utility in predicting risk of suicide attempt or death.

Simon, G. E., Johnson, E., Lawrence, J. M., Rossom, R. C., Ahmedani, B., Lynch, F. L., . . . Shortreed, S. M. (2018). Predicting suicide attempts and suicide deaths following outpatient visits using electronic health records. *American Journal of Psychiatry*. Advance online publication. doi:10.1176/appi.ajp.2018.17101167

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Suicide Prevention Resource Center

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