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**Behavioral Health Service**

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**Overview of the JPS *Better Tools!* Project**

As U.S. suicide rates climb to their highest rates since the Great Depression of the 1930’s, healthcare systems across the country are searching for more accurate ways to identify those patients who are at heightened risk for suicidal acts. In many healthcare systems, suicide risk screening questions are now being asked of any individual who presents for care. However, simply asking a patient whether he or she feels suicidal is not enough. Many highly suicidal individuals will deny that they plan to kill themselves when asked by a healthcare provider; others with heightened risk may not be suicidal when they are asked but then become suicidal a short time later.

A 2015 research study in the Veteran’s Administration showed that “predictive algorithms” could identify VA patients at higher-than-average risk of suicidal acts. To create a “predictive” algorithm, hundreds of datapoints are analyzed for a large group of patients who died by suicide and another large group of patients who did not die by suicide. The datapoints that discriminate between these two groups are then combined in a weighted “formula” (algorithm) and this formula (predictive algorithm) is tested in other groups of patients, some of whom died by suicide and some of whom did not, until it is as accurate as possible. In this kind of “big data” project, literally millions of patient records and months of machine learning and data analysis go into to figuring out the right combination and weighting of datapoints to make predictions as accurate as possible.

Following the VA’s successful algorithm, a second successful predictive algorithm was created for an insured civilian population (mostly individuals with Kaiser Permanente insurance). However, no predictive algorithm exists for patients like those at JPS – mostly uninsured, poverty-level patients, who are often at the highest overall risk for suicide.

**With funding from the Jordan Elizabeth Harris Foundation,** the JPS ***Better Tools!*** project will create one or more predictive algorithms to help identify JPS patients with elevated suicide risk. The intent of the project is to embed the final algorithm into the medical record so that physicians can see: 1) how patients answer questions about their own suicide risk, and 2) what the algorithm says the risk level is. Once the algorithm is created and in the electronic health record, ***Better Tools!*** investigators will assess whether the algorithm improves JPS provider accuracy in identifying suicidal patients and preventing suicidal acts.