Predictive Modeling: The Role of Opioid Use in Suicide Risk

WHAT WILL WE DO?

Suicide deaths and opioid-related overdose deaths are rising in the U.S. Since 1999, the age-adjusted suicide rate has risen 27%. Over the same time period, the rate of opioid-related overdose deaths has tripled. Researchers know that opioid use, overdose, and suicide are related, but they need to better understand precisely how. “We’ve done preliminary work suggesting that 22% to 37% of opioid-related overdoses are in fact suicides or suicide attempts,” says Bobbi Jo Yarborough, PsyD.

Dr. Yarborough, an investigator at the Kaiser Permanente Center for Health Research, will lead a new study to examine the role of opioid use in suicide risk. The study will use electronic medical records to look for patterns in a massive dataset that includes 24 million medical visits, 35,000 suicide attempts, and 2,600 suicide deaths. The study will include health records from seven different health systems—Health Partners in Minnesota, Henry Ford Health System in Michigan, and five Kaiser Permanente regions—Colorado, Hawaii, Southern California, Washington, and Northwest.

By better understanding the relationship between opioids and suicide, the research seeks to improve on current models that predict a suicide attempt within 90 days of a mental health or primary care visit. These models include a range of medical and mental health diagnoses, current and past prescriptions, and patterns of health care use. Researchers believe that by incorporating more variables related to opioid use into these prediction models, they can improve the tools and help identify more patients who are at risk of suicide.

Researchers will evaluate several possible variables that may be able to improve current models to predict a suicide attempt or death: illegal or prescribed opioid use, opioid use disorder, stopping or substantially reducing dose of prescribed opioids, and prior (non-fatal) opioid-related overdoses.

WHAT DIFFERENCE WILL THIS STUDY MAKE?

Health care settings are an ideal place for providers to intervene to prevent suicides, but providers need better tools to identify which patients are at greatest risk. This study seeks to create a state-of-the-art suicide risk prediction tool and put it in the hands of health care providers. “If our study is successful,” Dr. Yarborough says, “clinicians will have a powerful new resource to prevent suicide.”