

Consultation-Liaison Psychiatry 2023

Title: Technology-Enabled Suicide Prevention in Primary Care and Other Medical Settings: A Scalable Solution

Background: Suicide is the 12th leading cause of death in the United States, resulting in over 48,000 deaths in 2021. 44% of suicide decedents had contact with their PCP within 1 month of the suicide, making regular screening in critical. Yet, there are many barriers to implementation. Technology-enabled suicide prevention using a mobile health (mHealth) platform offers scalable, real-time data collection that enables immediate intervention to prevent risk escalation and sentinel events.

Method: A technology-enabled suicide prevention program was implemented across various clinical settings including primary and specialty care, health insurance plan sponsored protocols, and disability claimants. Patients engaged through bulk eligibility files, direct provider referral, and self-sign-up protocols. The mHealth platform features psychoeducation, mood/sleep tracking, and asynchronous assessments for continuous monitoring of new and emerging suicide risk. Three factors determine potential risk: 1) Positive response to suicidality on the PHQ-9, PHQ-2/9, or Edinburgh, 2) Natural language processing (NLP) identifies potential risk, or 3) Increase trending in proprietary risk score (Pardes et al., 2022). Urgent alerts are triggered for high-risk activity, initiating the SAFE-T Protocol and Columbia Suicide Severity Risk Score screen version as well as safety planning initiatives (SPI) and lethal means restriction counseling.

Results: Data from 10,099 mHealth patient users collected between 4/1/22-3/16/23 showed 718 patients with self-harm responses >0 on the PHQ-9/PHQ-2/9 or Edinburgh, triggering 1,127 urgent alerts. An additional 33 patients were identified through NLP. 300 unique patients completed outreach after an urgent alert: 23 evaluated at high risk, 81 at moderate risk, 143 at low risk, and 90 indicating no risk. Among patients identified with a high-risk C-SSRS score (N=23), a total of 48 urgent alerts were triggered (46 by assessment, 2 by NLP detection).

32% of patients who triggered an NLP alert either did not take an assessment or did not indicate self-harm on the PHQ-9, PHQ-2/9, or Edinburgh prior to the urgent alert. Patients who triggered NLP urgent alerts were at medium or high risk for suicide at more than double the rate of individuals who triggered PHQ-9 urgent alerts.

Conclusion: mHealth asynchronous and automated suicide risk screening with concomitant care team support enable proactive identification, risk stratification, and intervention across large populations of patients across diverse settings. Thirty-five percent of patients who completed safety screening assessments were at high or moderate risk of suicide necessitating urgent interventions. Technology-enabled suicide prevention programs provide effective solutions at scale for suicide prevention.

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Authors/Speakers:

Speaker: Tom Zaubler , tom@neuroflow.com, CMO

Author: Amanda Brooks, amanda@neuroflow.com, Director of Clinical Strategy & Growth

Author: Gaurav Arora , gaurav@neuroflow.com, Response Coordinator

Learning Objectives:

By the end of this presentation, participants will be able to:

1. Explain the purpose of technology in enhancing suicide prevention programs.
2. Describe the potential impact of technology-enabled suicide prevention programs.