

# PREDICTIVE ANALYTICS TECHNOLOGY USED TO PREVENT SUICIDE AMONG VETERANS



**“ The Attivio Platform offers a schema-less index, the ability to correlate information across data types, and advanced text analytics that our project has relied on time and again.**

Chris Poulin,  
Founder & Principal Partner,  
Patterns and Predictions

## THE CUSTOMER

The Defense Advanced Research Projects Agency (DARPA) falls within the U.S. Department of Defense and is responsible for developing emerging technologies. The group has joined forces with the Dartmouth Hitchcock Medical Center on the Durkheim Project, which is dedicated to linguistics-driven analytics to identify mental health risk factors among US veterans, including trying to reduce the suicide rate among veterans which is currently about double that of the general US population.

The Durkheim Project seeks to provide more accurate suicide risk detection and better understanding of the expression of suicide ideation through data mining of text and images. The project is led by Attivio's partner, Patterns and Predictions, a leader in event-driven analytics. Founded by Chris Poulin, Patterns and Predictions first focused on the military's growing suicide problem along with Dartmouth College researchers in 2010. Within a year, Poulin secured a \$1.7 million DARPA contract and developed a mobile app that monitors mental health indicators among combat-exposed veterans.

## THE CHALLENGE

Monitoring veterans' risk of suicide and self-harm in real/near time requires collecting, accessing, and analyzing veterans' social media and other online content (e.g., Facebook, Twitter, etc.) The gathering of this disparate, unstructured data requires complex text analytics technology with predictive functionality.

## THE SOLUTION

The Attivio Platform integrates multiple social, online and mobile data sources, and provides key functionality upon ingestion of each piece of content, including entity identification and other advanced text analytics.

The Attivio Platform then enables ad hoc data queries from the Patterns and Predictions application to analyze a patient's risk for harmful behavior over time, including finding patients whose last document processed yielded a suicidality score higher than the previously recovered average score. AIE automatically joins all related data and or text-based content, with no advance data modeling required.

## THE OUTCOME

The Attivio Platform integrates multiple social, online and mobile data sources, and provides key functionality upon ingestion of each piece of content, including entity identification and other advanced text analytics.

DARPA is now providing technology for a scaled up text collecting social networking data, mobile information, user location, and de-identified text messaging and content from more than 100,000 U.S. veterans. This Big Data initiative is a tightly integrated effort with one objective: preventing suicide among veterans.