Suicide is the second leading cause of death among members of the United States military. Statistics from the US Department of Veterans Affairs (VA) suggest that approximately 16.8 veterans die by suicide each day. But by leveraging AI, DataRobot has proven screening for warning signs can offer opportunities for preemptive measures to be taken to save lives.

**DataRobot’s Machine Learning Solution to Prevent Suicide**

- Our work for the Federal government includes predicting which warfighters are at risk of suicide for one of the armed services. We leveraged the Armed Service’s electronic health records to better understand the factors surrounding suicide attempts and deaths by suicide without prior attempts. The final model in the effort predicted with 74% accuracy in the test data, those warfighters who attempted suicide with a 59% true positive rate.

- DataRobot leveraged prediction explanation clustering which is further explained in our blog: [https://blog.datarobot.com/how-ai-can-help-veterans](https://blog.datarobot.com/how-ai-can-help-veterans).

- The prediction explanation clusters revealed that prescriptions of anxiolytic medicine prescriptions taken, within the previous six months, was a strong predictor of an increased risk for a suicide attempt. **Thirty-five percent of warfighters who had at least one anxiolytic prescription in the previous six months attempted or committed suicide.**

- The model is not yet deployed but one option is to integrate the data with the dashboard for unit commanders. This would give warnings of warfighters at risk, and it would be expected to be correct six times out of ten (IE 59% true positive rate). Another option is to use the different prediction explanation clusters to inform policy around targeted interventions -- for example by providing counseling for any warfighter who is prescribed an anxiolytic.

**DataRobot Proof of Concept Outcomes**

DataRobot did not replace the Armed Service’s experienced data science team. Instead, our automated AI platform provided a turbo boost in capability & capacity for existing government experts by enhancing their:

- **Speed:** Automated modeling eliminated many time-consuming steps required to conduct machine learning analyses (hours versus weeks).

- **Accuracy:** The final DataRobot model outperformed the algorithm developed by the Service’s analytics team.

- **Democratization:** Our easily accessible user interface empowered analysts and government to collaborate on exploratory analysis, make modeling decisions, and immediately share results.

- **Savings:** By using DataRobot’s platform, the Armed Service’s data science team estimated the time saved in model building was valued at more than $63k, and the increased capacity measured in contractor FTEs was estimated at more than $4.4 million.
Fast Tracking Help to Our WarFighters

Enable AI Speed through Automated Modeling

Identify the Risk and Protective Factors Using Prediction

Identify Individuals in Distinct Risk Groups by Clustering Common patterns of Risk and Protective Factors

Deploy Data to Dashboards for Alerting and Action

Help and Assist At-Risk Service Members in Appropriate Ways for their Risk Group

Contact the Public Sector sales team at DataRobot to learn more: public-sector@datarobot.com.