Mitigating Tragedy— How AI and ML Can Help Prevent Veteran Suicides

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Veteran suicide remains one of the most pressing issues for the veteran community today. While the rate of veteran suicides has fluctuated in the past few years, the 2022 National Veteran Suicide Prevention Annual Report released by the U.S. Department of Veterans Affairs (VA) claims that suicide was the second most common cause of death among veterans under the age of 45. The numbers in the report also show that approximately 17 veterans committed suicide every day in 2020.

This is an ongoing problem that the U.S. Department of Defense (U.S. DoD) and VA offices are trying to tackle by increasing support services to veterans and researching

innovative ways to combat the problem. One revolutionary solution they have been looking into is the use of Artificial intelligence and machine learning (AI & ML) to combat these ongoing tragedies.

To dive deeper into the role that AI and ML can play in combatting veteran suicide, we sat down with Sunjit Bir, Lead Executive of Strategy and Business Development at Netapp. During our discussion, Sunjit explored what the U.S. DoD and VA are doing to fight back against this issue, the way AI & ML can help in this initiative, and the roadblocks the VA may face when implementing AI to fight veteran suicide.

GovDataDownload (GDD): How large of a problem is veteran suicide in our country today? Is it a problem that is improving?

Sunjit Bir: This is a truly significant problem. Suicide happens to be the second leading cause of death for veterans under the age of 45. Veterans are at a 57 percent higher risk, in general, for suicide than non-veterans. And it's a problem that's getting worse. Over the last two decades, we have seen [veteran suicide] rates rise by 50 to 90 percent, depending on age groups.

Sunjit Bir
Lead Executive of Strategy and Business Development at Netapp U.S. Public Sector, Inc.

While we can find yearly statics on suicide rates per one hundred thousand veterans, the key here is that, if you are the family of the veteran or the veteran that is affected by suicidal ideation or suicide, this is a big problem regardless of statistics. We recognize as a nation that we can't let our veterans down.

GDD: What are some of the initiatives that the U.S. Department of Defense and Department of Veterans Affairs are implementing to help fight back against veteran suicide?

Sunjit Bir: The VA has been proactive in funding research to identify causes and detect potential suicide risks early. There are dedicated researchers at many VA facilities and funds have flowed out to universities and research consortia to address this.

Furthermore, the VA has invested in IT infrastructure to facilitate and encourage research and experimental development. They are also funding a study to explore the best practices and best-of-breed technologies are available from industry partners that can be leveraged to help fight back against Veteran suicide.

Last, but not least, the VA has implemented a veteran suicide hotline to make it easier to connect those at risk with someone who can help quickly.

GDD: What are some different technologies that could make a difference? How could AI be leveraged to help combat veteran suicide?

Sunjit Bir: No technology can fully replace clinical care, proactive counseling, and concern from friends and family. However, there are ways technology can be used to reduce the staffing burdens required to identify suicidal risks and identify these signs much earlier.

Letting problems fester and amplify undetected only make them harder to address. AI and ML technologies are capable of flagging high-risk use cases quickly so that clinical staff and counselors can use their limited staff resources to address the highest-risk patients first, and to reduce the chances of a patient flying under the radar.

The DoD has been leveraging predictive AI and ML models in research facilities to find early signs of PTSD, suicidal ideation and risky behaviors in soldiers. These same technologies can be leveraged by the VA to help identify behaviors in veterans that could indicate when they are at high risk for suicide. Not only can models be leveraged, but the right IT architecture at the data layer can make it less expensive and less cumbersome to share insightful data sets across facilities within and outside the VA. All while keeping

private patient data safe.

GDD: Is this something that the VA is already utilizing, or is this just something that has been suggested? Where is this initiative in the implementation process?

Sunjit Bir: Yes, the VA has already implemented programs and funded projects with industry partners and research consortia to create models to detect risk. The challenge is thorough testing and establishing a high level of confidence among counselors and medical professionals to ensure that the models can balance things like false positives and false negatives while also not overfitting models based on narrow patient populations.

GDD: What challenges or roadblocks keep the VA and DoD from using AI this way? Are they technological challenges?

Sunjit Bir: There are many challenges. The first challenge is ensuring models are applicable across the entire population of veterans. The next challenge is reaching consensus among the medical community on the right balance of filtering out false positives at the expense of accidentally generating false negatives.

Lastly, the speed and scale of keeping these models updated are important. As populations and conditions fluctuate, these models have to be updated to keep them accurate. This requires IT resources, data engineers, and data scientists to keep a large model library updated and fresh.

GDD: How can NetApp and its partners help to make this AI use case a reality? What role can their technologies play in making this possible?

Sunjit Bir: NetApp can address the challenges by reducing IT complexity and speeding up the workflow & data pipeline to keep models updated and fresh. Additionally, we can reduce the challenges in bridging data across facilities that may be inside or outside the VA medical system.

The data scientists, clinicians, and subject matter experts have a lot on their plate already.

We can reduce the IT burden by creating a seamless experience to quickly share data sets and models amongst researchers, and to reduce the burden to operationalize and keep models relevant.

Today, if one scientist wants to share a large data model with another scientist, that sharing can take hours or days depending on the data size. Whereas I could share a Google doc with you almost instantly. We have tools that can be used to make data sharing more like Google Docs and increase the speed and

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schedule to keep the model updated.

We are looking forward to working with our partners to reduce the IT burden so the experts can do their job in creating high-fidelity production models that clinicians and counselors can use as decision aids to do their job. All while keeping data, privacy, and HIPPA safeguards in place.