



Optimizing Human Performance and Enhancing Military Readiness

MARKET TRENDS REPORT



Introduction

Today, the military's most important weapon system is not the latest fighter plane, battleship, or futuristic technology. The military's most important weapon system is its warfighters.

In order to overmatch the enemy in multidomain operations, protect American interests and stay resilient themselves, warfighters must demonstrate the superior physical fitness and health required for combat.

But there's a challenge inherent in the recruitment and retention of healthy, resilient warfighters. Less than 1% of American people serve in the military. In fact, 70% of Americans are military-ineligible because they don't meet certain fitness standards, or because of drug use, criminal records and more. This small pool makes it difficult for the military to recruit, retain and ensure that people are physically able to serve.

In the past, the military has taken a straightforward, tactical approach to health: Is a soldier fit and healthy enough to serve and fight? But as times change, so do approaches to health, and the military is realizing that a tactical, evaluative approach to standard health is no longer enough to serve its members.

The military must move to a holistic, multidisciplinary approach to managing and optimizing human performance and health, increasing resiliency, and keeping the 1% of Americans who serve in the military as healthy as possible, for as long as possible.

To explore the hows and whys of this holistic approach as applied to the military, GovLoop partnered with Leidos, a global leader in the integration and application of information technology, engineering and science, for this Market Trends Report. We gained insights from Michael Lumpkin, Vice President for Human Performance; Kevin Kaiser, Vice President for Program Management; and Patrick Walsh, Senior Director of Business Development, all of Leidos.

By the Numbers

\$762 billion

the total the Department of Defense (DoD) budget request, including \$49.5 billion (6.5%) to fund the Military Health System (MHS).

Source: [FAS.org](https://fas.org)

23.5 million

unique veterans' health records have been migrated by the Department of Veterans Affairs to its new electronic health records system.

Source: [VA](https://va.gov)

1 in 20

soldiers fails the Army Physical Fitness Test annually, and 13% of soldiers are clinically obese.

Source: [Army.mil](https://army.mil)

13.9%

the amount military health spending grew between 2009 and 2015.

Source: [HealthAffairs.org](https://healthaffairs.org)



9.5 million

DoD beneficiaries and approximately 205,000 Military Health System personnel have electronic health records through the Military Health System, supported by DoD MHS GENESIS.

Source: [Health.mil](https://health.mil)

66,989

hospitalizations of active component members of the U.S. Army, Navy, Air Force and Marine Corps were recorded in 2019.

Source: [Health.mil](https://health.mil)

THE CHALLENGE

Moving Past a Limited, Tactical View of Health

It's never been easy to maintain the health and well-being of 1.4 million Service members, not to mention 1.7 million military family members. But in addition to the large amounts of people in the military who need help staying well, there are other unique challenges in this space.

"As noted, there is an incredibly small pool of people available to serve in the military," said Michael Lumpkin, Vice President for Human Performance at Leidos. "This means the military has to get the best people, and they have to retain them as long as they can, which means keeping them as healthy as possible."

But the very nature of their duties can make it difficult to stay healthy. "Today, Service members are being asked to do more and more," said Kevin Kaiser, Vice President for Program Management at Leidos. "More deployments, more stressful situations, the ability to do different things in different operational theaters. This introduces more health challenges and chances for physical injury."

Another obstacle is that the military historically has taken a tactical view of well-being. The focus has been on a checklist of questions: Can soldiers pass physical training? Can they fire their weapons? Have they been diagnosed with a mental health issue?

But this tactical approach has limits in an evolving world, where mental health and overall resiliency are now viewed as equally important as physicality.

How can the military improve its health approaches to best serve and retain active duty members, with a focus on human performance improvement and optimization that will increase service members' resiliency and long-term health?

The Solution: A Holistic Approach to Improving Human Performance

What's needed is a more holistic way of understanding and addressing a Service member's well-being, supported by data, technology, culture and analytics.

The goal of the military in terms of long-term health of its Service members shouldn't be to patch them up and send them into battle; the military must ensure they are healthy from a holistic, preventative standpoint, and work to keep them that way.

"This requires multiple perspectives, and new approaches to preventative care and treatment," said Patrick Walsh, Senior Director of Business Development at Leidos.

Moving to biobehavioral research using technology and data to drive decision-making and improve health and performance can help the DoD build a resilient and ready fighting force.

Biobehavioral health and research focuses on the interaction among biological, behavioral, psychological, sociocultural, and environmental variables that influence health.

There are several methods the military could eventually deploy to support this kind of holistic, resilient health and human performance optimization. They involve:

- An in-depth screening and data collection of health markers about a warfighter when they enter the military between the ages of 18-22
- Continuous tracking of warfighter's health, status, assessments and other elements throughout their career and into their retirement
- Using this data over the lifespan of a soldier's career, including genomic sequencing to eventually build predictive analytics models for service members and potential injuries or issues
- Using insights gained from these predictive models to build better hardware, environments and adjust tactics to alleviate health problems before they become a reality

"By collecting and analyzing data, we can notice what makes a difference, and we can use that information to try to avert problems, whether it involves changes in lifestyle, or the environment, or health care interventions," said Kaiser.

Data analytics could allow for improved decision-making and health practices as well as tailored environments, approaches and protocols across the military.

"A holistic approach bolstered by biobehavioral data will give the military projections about what types of changes they might need to make today, to help with their performance in the future," said Kaiser.

BEST PRACTICES

Optimizing Human Performance in the Military



1. Investigative research studies:

Focusing on investigative research studies means developing a broad knowledge base, analytical skill, creative thinking and the hands-on experience demanded of clinical researchers devoted to either laboratory-based or clinically based patient-oriented investigation. This area identifies methods to improve operational performance, bolsters mission readiness and supports retention. Investigative research studies can help to establish return-to-duty criteria when service members are wounded or become ill.



2. Medical modeling and simulation:

Medical modeling, the development of decision support tools for improving forecasting and patient care can improve medical and health readiness by providing researchers and medical planners with accurate tactical, injury, and clinical treatment data for casualties and other health scenarios. Medical simulation-based clinical training has also been recognized as a key contributor to the increase of casualty survival in the battlefield.



3. Health analytics:

In the military's complex health and safety ecosystem, there is no end to the amount of data being generated, collected and stored. This information has the potential to influence important research and discovery, identify trends affecting health and safety, inform policy and processes, and ultimately create a healthier, safer and more efficient DoD. The right data, layered with the right analysis, facilitates identification of patterns and trends used to improve diagnosis and treatment of illnesses and disease. Working with teams of biostatisticians, epidemiologists, mathematicians, and medical informaticists with data sets allows the delivery of actionable information that aids decision-making to support improved health outcomes.



4. Data and digital transformation:

Health care systems are consolidating, and their information technology systems are multiplying through mergers. To gain a clear understanding of their current state, health systems need to first assess their existing IT environment, integrate disparate IT systems that may have occurred through consolidations and mergers, and optimize performance of deployed technology investments, so data can be better stored, accessed and analyzed. "There are vast amounts of data on Service members, but the data is not often available to health care or mental health counselors," Lumpkin said. "Disparate data has to be brought together and analyzed and compiled, but laws and regulations and privacy can make this difficult. We need to have the right data and the right assessments for the right people, and do it at scale. Even though we have millions of people to tend to, data must be tailored to specific needs."

A photograph of four Navy SEALs in a small inflatable boat on the water. They are wearing tactical gear, including helmets and vests, and appear to be in motion. The image is overlaid with a semi-transparent teal color.

CASE STUDY

Helping Navy SEALs Beat the Heat

As previously discussed, an incredibly small number of Americans are eligible for general military service, which drives initiatives around recruiting, retaining and keeping Service members as healthy as possible. Now imagine the even smaller number of Americans who are eligible to serve in one of the most elite units of the military: the Navy's Sea, Air and Land teams, known as the Navy SEALs.

Navy SEAL training, preparation and fitness programs are notoriously demanding, with many recruits and team members experiencing heat stroke and exhaustion – in some cases forcing them to drop out of the program altogether. So, determining when a SEAL can return to duty after suffering a heat injury or another illness is critical to both the SEAL's health and career. The Navy wanted a standard method for helping SEALs return to duty safely.

With Leidos, the Naval Health Researcher Center (NHRC) has conducted 145 heat tolerance tests (HTTs) involving Navy SEALs and other Naval Special Warfare personnel.

“Because of our lab abilities, and our researchers, and our scientists, we have been able to develop a program that is now a standardized approach for Navy SEALs that suffer heat injuries in training,” said Keiser. “They can now be run through a protocol of exercise under hot conditions, to then look at their body temp and see if that injury can be duplicated, and if not, then return those individuals, certify them and return them back to their SEAL training class.”

Since its inception, the program has returned 74 personnel back to duty and enabled 19 personnel to complete their training to become U.S. Navy SEALs.

HOW LEIDOS HELPS

With a singular focus on maximizing performance and survivability, Leidos supports a wide range of human performance research areas, such as physiology, resilience, and occupational and environmental health. To determine methods of reducing injuries and preserving and enhancing individual performance, their scientists study physiological and cognitive effects of environmental and operational stressors on military personnel.

Outside the laboratory, Leidos develops and maintains databases rich in clinical data that it uses to create in-depth analyses of warfighter health issues.

“We look at everything from a holistic, human-centric perspective,” said Walsh. “That’s the difference you get at Leidos and our approach.”

Leidos is also helping to build vast population-health databases to provide key insights into how health care can integrate everything from genetics to housing to behavioral health to improve value for service members. In fact, one of Leidos’ population-data efforts is taking place through the U.S. military, which has been gathering genetic and in-depth ongoing health profiles of its more than 1 million active duty personnel.

To learn more, visit: leidos.com/human-performance

Conclusion

Today, warfighter performance involves much more than just standard-issue check-ups and fitness. To recruit, retain and help its members serve to the best of their abilities, the military must pivot to prioritizing resiliency, long-term health approaches and overall wellness –physically, mentally and environmentally.

There is a solution: optimizing human performance in the military through a biobehavioral, holistic approach mixed with data, analytics, and technology.

When applied, this will result in a more ready military force, improve decisions, and provide a better quality of life for our Service members and families, which is the most important goal of all.



ABOUT LEIDOS

Leidos is a Fortune 500® information technology, engineering, and science solutions and services leader working to solve the world's toughest challenges in the defense, intelligence, homeland security, civil, and health markets. The company's 30,000 employees support vital missions for government and commercial customers. Headquartered in Reston, Virginia, Leidos reported annual revenues of approximately \$11 billion for the fiscal year ended January 3, 2020.



ABOUT GOVLOOP

GovLoop's mission is to "connect government to improve government." We aim to inspire public-sector professionals by serving as the knowledge network for government. GovLoop connects more than 300,000 members, fostering cross-government collaboration, solving common problems and advancing government careers. GovLoop is headquartered in Washington, D.C., with a team of dedicated professionals who share a commitment to connect and improve government.

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