PHILIPS

Operational resilience begins with AI-powered Health Insights

Invisible threats are the greatest operational risk to performance and safety.

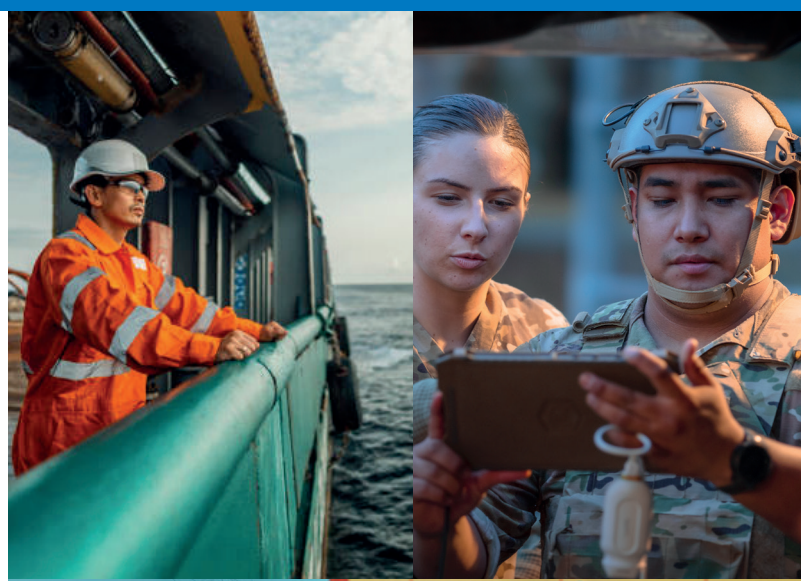
High-exposure workforces such as soldiers, frontline workers, care providers and industrial crews that operate where one unseen factor can jeopardize lives and missions. Their daily risks include:

- Stress and fatigue
- Toxic exposure
- Heat strain
- Viral and biological hazards

These dangers don't just impact individual health, they undermine safety, performance and continuity of a team. Philips is pioneering a new era of operational resilience with patented AI-driven technology. This vision moves beyond reactive care to predictive intelligence, helping organizations anticipate risks, prevent incidents and protect performance before failure occurs.

Our solution seamlessly integrates with consumer wearables to gather biometric data – transforming it into actionable fitness and wellbeing insights. These algorithms run on a robust platform optimized for extreme conditions which ensures operational continuity even in off-grid environments. This capability was first proven with the US military where we demonstrated the ability to accurately indicate an emerging infection days before clinical confirmation[1,2].

While proven in military settings, applying this breakthrough to broader sectors will require close collaboration with partners to adapt and scale the technology responsibly. Together, we can redefine readiness and resilience for the future.



Empowering workforce health at every level

System / Organizational level

Challenge Identifying emerging threats at scale.

Solution Organization-wide situational awareness. Real-time mapping of biological and environmental threats reveals hot spots early. This supports proactive outbreak prevention, smarter resource deployment and continuous operational resilience.

Team / Management level

Challenge Limited visibility into team physiological status – especially in off-grid or high-stress environments.

Solution Dynamic, on-site decision support for supervisors. Tracking fatigue, exposure and readiness to reduce accidents minimizes the impact of a potential threat such as viral spread, and optimizes resource utilization –ensuring teams remain "fit-for-duty" without compromising safety.

Individual / Operator level

Challenge Workers lack real-time insights into their own physiological limits.

Solution Edge-powered personal intelligence. Actionable health insights empower the individual with a "check engine light" for their body, enabling early intervention, self-care and safer performance in high-exposure environments.

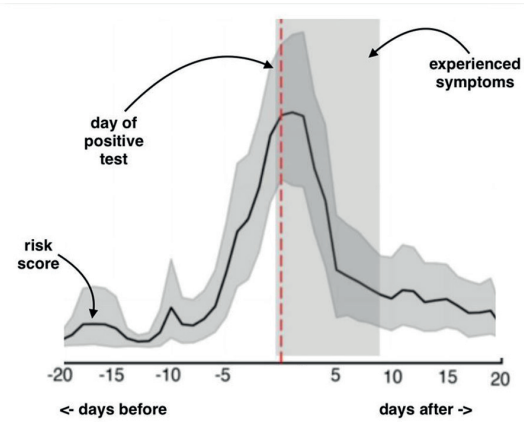
Operational resilience with predictive health AI

Algorithms that see the invisible

Philips Health Analytics Engine delivers algorithms that reveal hidden risks including individual readiness, toxic exposure, heat stress and team performance. This empowers organizations to be proactive and keep their workforce prepared.

Readiness risk insight for workforce safety

Inspired by Rapid Analysis of Threat Exposure (RATE) algorithm, originally designed and tested to protect thousands high-risk military personnel during COVID, our individual readiness innovation delivers early indicators from wearable data, helping teams anticipate and manage performance risks.



Pre-symptomatic signals: RATE score vs. Days of positive test
The RATE score rose in the week before a positive COVID test.

Toxic exposure mapping

Currently designed to detect opioid exposure[3], this capability supports rapid response and compliance. Future applications may extend to a broader range of toxic exposures (biothreat and environmental hazard detection) as the technology evolves.

Heat risk prediction

Predictive AI transforms wearable data into actionable insights – signaling potential heat stress before it impacts readiness. Built for downtime prevention, not for medical intervention.

"Rate is not just about monitoring vitals– it's about predicting risk. For a soldier, that means identifying potential health issues before they become mission-impacting. It's an early warning system that helps commanders make informed decisions aboud Readiness."

Jeffrey "Mach" Schneider, former U.S. Air Force Officer, Program Manager at the Defense Innovation Unit; currently consulting with Philips.

Team readiness that keeps missions moving

Supports safe deployment, rest-cycle planning and rapid redeployment to optimize performance without compromising health.

Trusted innovation for safer, smarter workforces

Proven in defense. Validated in sports. Ready for industry.

Platform advantages

- Works with commonly available wearables (Garmin, Polar, Oura, and more)
- Seamless integration with existing systems
- Third party algorithm can run on the same platform
- Decentralized, scalable global deployments
- Edge capability for off-grid environments
- Distributed architecture for resilience and redundancy
- Military-grade security built into every layer

Continued development and strategic partnerships

- Defense-backed innovation: Supported through ongoing DoD funding
- Research and clinical validation: Backed by leading institutions and competitive grants
- Sports performance insights: partnerships with elite clubs such as PSV Eindhoven (Dutch football league champions 2025) and Team Visma Lease a Bike (Dutch professional bike racing team and winner of the 2022 and 2023 Tour d'France)

"With real-time insights, we can make smarter decisions—before fatigue becomes injury. This is just the beginning. The potential of this innovation goes far beyond what we see today."

Earnest Stewart, Technical Director PSV Eindhoven.
Interview PSV Business Magazine 2026.

Join us in redefining health security for high-exposure workforces worldwide.
biosensing@philips.com

[1] Conroy, B., Silva, I., Mehraei, G. et al. Real-time infection prediction with wearable physiological monitoring and AI to aid military workforce readiness during COVID-19. Sci Rep 12, 3797 (2022).
[2] Feng T, Noren DP, Kulkarni C, Mariani S, Zhao C, Ghosh E, Swearingen D, Frassica J, McFarlane D and Conroy B (2023) Machine learning-based clinical decision support for infection risk prediction. Front. Med. 10:1213411.
[3] S. M. Miran et al., "Leveraging observational and prospective data to develop an opioid exposure detection model," 2024 46th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC), Orlando, FL, USA, 2024, pp. 1-6.

www.philips.com