ENTERPRISE MOBILITY MEETS COMPASSION

CURBING SUBSTANCE ABUSE THROUGH REMOTE MONITORING:

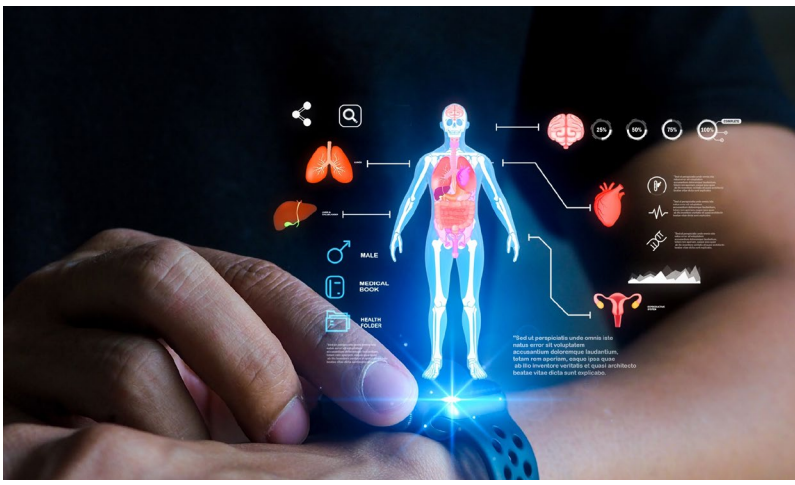
INTRODUCTION

The opioid epidemic continues to present significant challenges to public health. An estimated 10.3 million people in the United States aged 12 or older misused opioids in 2018 according to federal reports. West Virginia has been significantly impacted by the opioid crisis, experiencing some of the highest overdose death rates in the United States. In response, a groundbreaking partnership between VeeOne Health, NEXA, and KORE has been instrumental in supporting drug control policy in West Virginia. Together, these organizations have deployed an innovative solution aimed at reducing relapse rates among individuals recovering from substance use disorder (SUD).

This case study highlights VeeOne Health's CravAlert system, a technology-driven intervention powered by the VivaLink Biopatch, RHINO C6 device, and KORE's OmniSIM™ connectivity. Designed to address the critical transition from treatment to community reintegration, this system represents a powerful blend of compassion and cutting-edge technology in the fight against SUD.

CHALLENGES

The West Virginia SUD study revealed significant hurdles that needed to be addressed to support recovery effectively. The transition from structured treatment in a facility to independent recovery in the community posed a particularly high risk for cravings, anxiety, and overdose. Real-time physiological monitoring and timely interventions were critical to addressing these vulnerabilities.

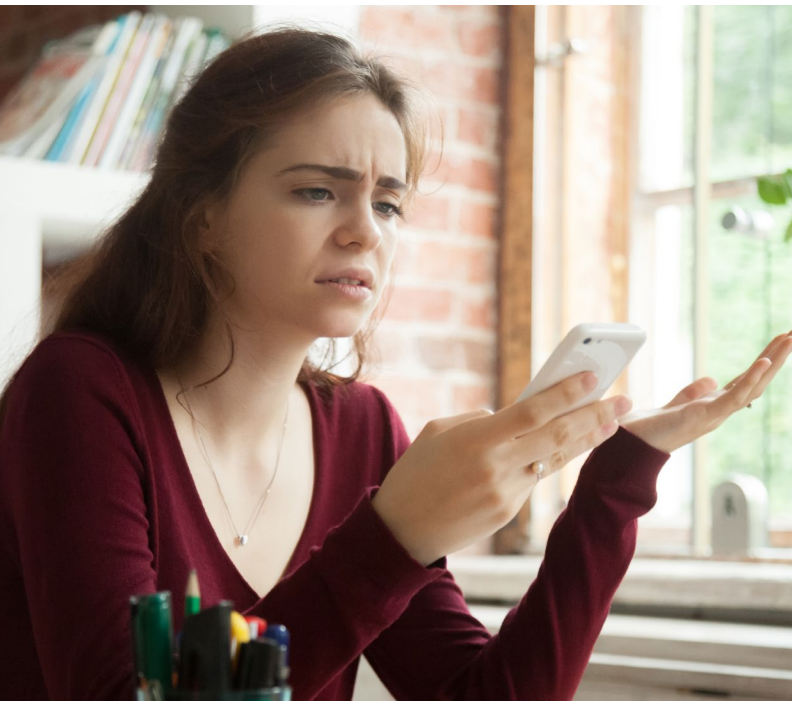


The CravAlert system was designed to solve these issues; however, one of the major challenges was hardware reliability. Previous reliance on consumer-grade devices, made by companies like Apple or Samsung,

proved inadequate for long-term clinical trial deployments. These devices presented issues such as limited availability, difficulties in managing diverse operating systems and security updates, and high costs associated with premium hardware.

Connectivity challenges also plagued the program, where patchy network coverage in rural areas led to inconsistent data transmission. Single-carrier dependency further hindered reliable remote patient monitoring, while pairing issues between biopatches and handheld devices caused delays in delivering critical interventions.

Additionally, managed services inefficiencies slowed program operations. Initial device deployments were cumbersome, cleaning protocols for reusable devices were not streamlined, and delays in redeployments reduced the overall program's efficiency.



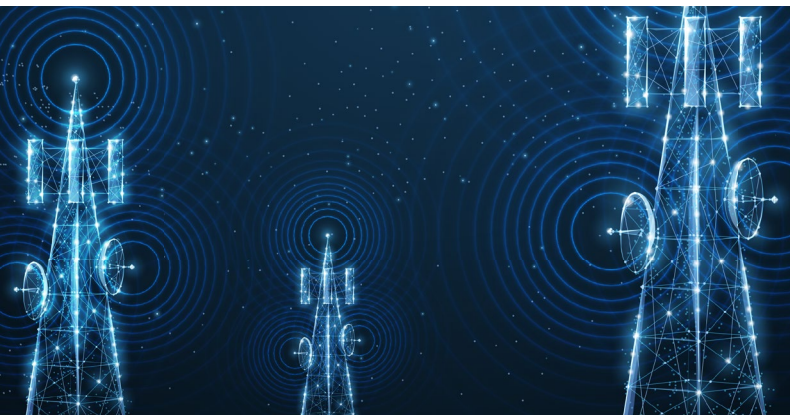
SOLUTION

The CravAlert system, developed by VeeOne Health, emerged as a pivotal solution. This system integrates wearable technology with machine learning for real-time data analysis and delivers peer recovery specialist interventions (PRSS) through predictive alerts. As Dr. Raj Masih from the Potomac Highlands Guild noted, "CravAlert has transformed how we address SUD relapse. It's a lifeline for patients in rural areas where traditional solutions fail."

The VivaLink Biopatch, an integral component of the system, monitors critical physiological endpoints such as heart rate, respiratory rate, heart rate variability (HRV), and skin temperature. With features like long battery life, reusability, and seamless Bluetooth connectivity, the Biopatch ensured consistent data collection and transmission.

To complement this, NEXA's RHINO C6 device served as a purpose-built Android solution acting as a gateway between the biopatch and CravAlert analytics. The RHINO C6's durability, long-term availability,

and lower total cost of ownership made it ideally suited for clinical environments. Jai Rao, Chief Product Officer at NEXA, remarked, "The RHINO C6 is ideally suited for the healthcare industry, providing the reliability and security needed for use cases like substance use disorder management." KORE further strengthened the solution with their OmniSIM multi-network connectivity, which provided access to multiple carriers and ensured uninterrupted data transmission, even in remote rural areas. As Jared Deith, VP at KORE, explained, "Our OmniSIM technology ensures no patient is left unmonitored due to connectivity issues, bringing healthcare to even the most remote regions." KORE also offered managed services, providing end-to-end kit lifecycle management from provisioning and activation to cleaning and redeployment, streamlining program operations and reducing inefficiencies.



Together, these components form a seamless and effective intervention system. Patients wear the VivaLink Biopatch, which continuously tracks vital physiological markers associated with stress and cravings. The biopatch connects via Bluetooth to the RHINO C6 device, which serves as the central hub, transmitting real-time data to the CravAlert platform. Using machine learning algorithms, CravAlert detects early warning signs of relapse and triggers alerts for peer recovery specialists (PRSS) to intervene immediately. This ensures that patients receive timely support, reducing their risk of relapse and improving long-term recovery outcomes. With KORE's OmniSIM ensuring stable connectivity even in remote areas, this integrated solution ensures uninterrupted monitoring and intervention, giving patients a reliable lifeline throughout their recovery journey.

OUTCOMES

The partnership's efforts yielded significant results. The program achieved a 67% reduction in stress and anxiety alerts, with noticeable decreases in cravings and relapse episodes. OmniSIM technology eliminated connectivity gaps, increasing data reliability by 95%, while streamlined managed services reduced idle time between device deployments by 30%. The RHINO C6's durability led to a 20% decrease in repair and replacement needs, and the overall solution delivered a 25% reduction in operational costs compared to

prior systems. Machine learning algorithms enhanced relapse prediction accuracy by 80%, enabling more effective interventions. Beyond operational improvements, patient outcomes also saw marked enhancements. Continuous real-time monitoring and timely interventions reduced relapse rates and improved recovery success, while reliable technology increased patient engagement. “Combining cutting-edge analytics with peer support creates a holistic recovery ecosystem that’s saving lives,” said Shaji Skaria, Clinical Solutions Lead at VeeOne Health.

Looking ahead, the system’s modular design supports scalability for statewide and national implementation. Potential expansions include integration with Medicaid to analyze cost-effectiveness on a broader scale, paving the way for widespread adoption and further innovation in healthcare technology.

ABOUT KORE

KORE is a pioneer, leader, and trusted advisor delivering mission critical IoT solutions and services. We empower organisations of all sizes to improve operational and business results by simplifying the complexity of IoT. Our deep IoT knowledge and experience, global reach, purpose-built solutions, and deployment agility accelerate and materially impact our customers’ business outcomes. For more information, visit korewireless.com.