New Jersey's Largest Healthcare System

Improved Healthcare IoT Security with Zero Patient Care Disruption

Ensuring secure care delivery for more than 3 million patients each year

Background

Based on its large, multi-site environment, in 2020 RWJBarnabas Health (RWJB) decided it needed to find a better solution for asset management, one that could go beyond the capabilities of its existing tools. The health system needed centralized visibility and management for tens of thousands of medical devices across 16 sites, with complete security and control. It also needed coverage across a broad array of other devices, such as environmental, communication, safety and security, and administrative systems.

RWJB wanted a solution that provided full, centralized inventory visibility and device security across its entire network of healthcare IoT and connected medical devices. The solution needed to be easy to use and maintain. It also needed to seamlessly integrate with their existing NAC and other tools.

Challenges

RWJB wanted a solution that met the following criteria:

- **Critical Care** – On-demand device availability for critical medical information and care delivery.

- **Network Complexity** – Service required for 16 hospitals, each with multiple inter-connected networks.

- **Device Visibility and Security** – Ability to identify, classify, and secure healthcare IoT and connected medical devices on the network without impeding patient care.

- **Leverage Existing Infrastructure Investments** – Numerous and variable systems were already in place and needed to be integrated, not replaced, and without added expense.

RWJBarnabas HEALTH

- 70 sites
- 16 hospitals
- 5,000+ beds
- Tens of thousands of healthcare IoT and connected medical devices

"Our existing tools could only secure the connected devices they could see. Cylera helped us fill in the device gap on our network, and inform our NAC of healthcare IoT and connected medical devices we couldn't find any other way. The asset management time savings we've gotten back, plus the improved security, has been tremendous. We're now implementing other integrations and actioning our findings to better optimize our business."

Hussein Syed, CISO
RWJBarnabas Health

Fortify Care. Accelerate Cyber Resilience.

Solution and Benefits

RWJB selected the Cylera platform because it presented a solution that met and went beyond the initial expressed requirements identified by the RWJB team. Cylera was able to forward data from each site into a centralized management console for cross-site visibility, asset management, and overall risk scoring.

RWJB also ranked breadth as one of the Cylera solution's top advantages. The Cylera platform delivered visibility, streamlined management, and critical security benefits across the entire RWJB environment, providing robust coverage for enterprise IoT, healthcare IoT, and connected medical devices delivering patient care.

Healthcare IoT Discovery and Inventory

Immediately after deployment, Cylera began passively monitoring network device traffic, and quickly identified devices on RWJB's network. At the first readout of the data collected and analyzed, the asset mix showed devices previously unknown, in-depth device details that hadn't been available previously, and the new ability to quickly find those devices with certainty based on Cylera providing asset location information. Using this current and accurate inventory of its healthcare IoT and connected medical devices, the RWJB team could immediately begin addressing security gaps.

Monitoring and Analysis

Cylera provided deep visibility and vulnerability assessment for sensitive medical devices using Cylera's patented network traffic emulation technology. This technology enables rigorous, safe, and out-of-band medical device vulnerability detection with zero touch to actual devices and no patient or workflow disruption. RWJB could quickly view it's full healthcare device risk level - by individual devices, sites, or for the entire healthcare enterprise - without impacting care.

> "The Cylera platform and integrations went far beyond RWJBarnabas' expectations. Cylera's intelligence engine works non-stop to identify new assets, new vulnerabilities, new threats, and new efficiencies for us."
>
> Hussein Syed, CISO
> RWJBarnabas Health

Risk Management

The Cylera platform's highly accurate risk scoring and prioritization, which is based on vulnerability assessment, indicators of compromise (IOCs), device type, in-use status, dependencies, and secondary controls, gave RWJB system administrators the automated, priority-ranked risk assessment they wanted. They could then use this list, along with built-in detailed remediation guidance which includes references to device manufacturer vulnerabilities, CVE and CVSS rankings, and mitigation instructions, to speed risk remediation. This workflow within the Cylera platform was a game-changer for RWJB IT and NOC/SOC operators, who were now able to identify devices, what they did, where they were located, and determine whether or not there was a true risk.

Threat Response

The Cylera platform employs artificial intelligence (AI) to correlate vulnerabilities, indicators of compromise (IOCs), network data, and in-service data. As a result, the RWJB team began to notice immediately after implementation an alert noise reduction, as well as an improved ability to quickly pinpoint and remediate actual - not just hypothetical - healthcare IoT threats.

Integrations

Cylera's library of built-in integrations with best-in-class IT and healthcare applications ensured RWJB could fully leverage its existing investments. Integrations between Cylera and other solutions used by RWJB were quickly configured, without requiring additional services. Cylera's robust APIs also ensure new integrations can be quickly implemented as RWJB's technology stack evolves.

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