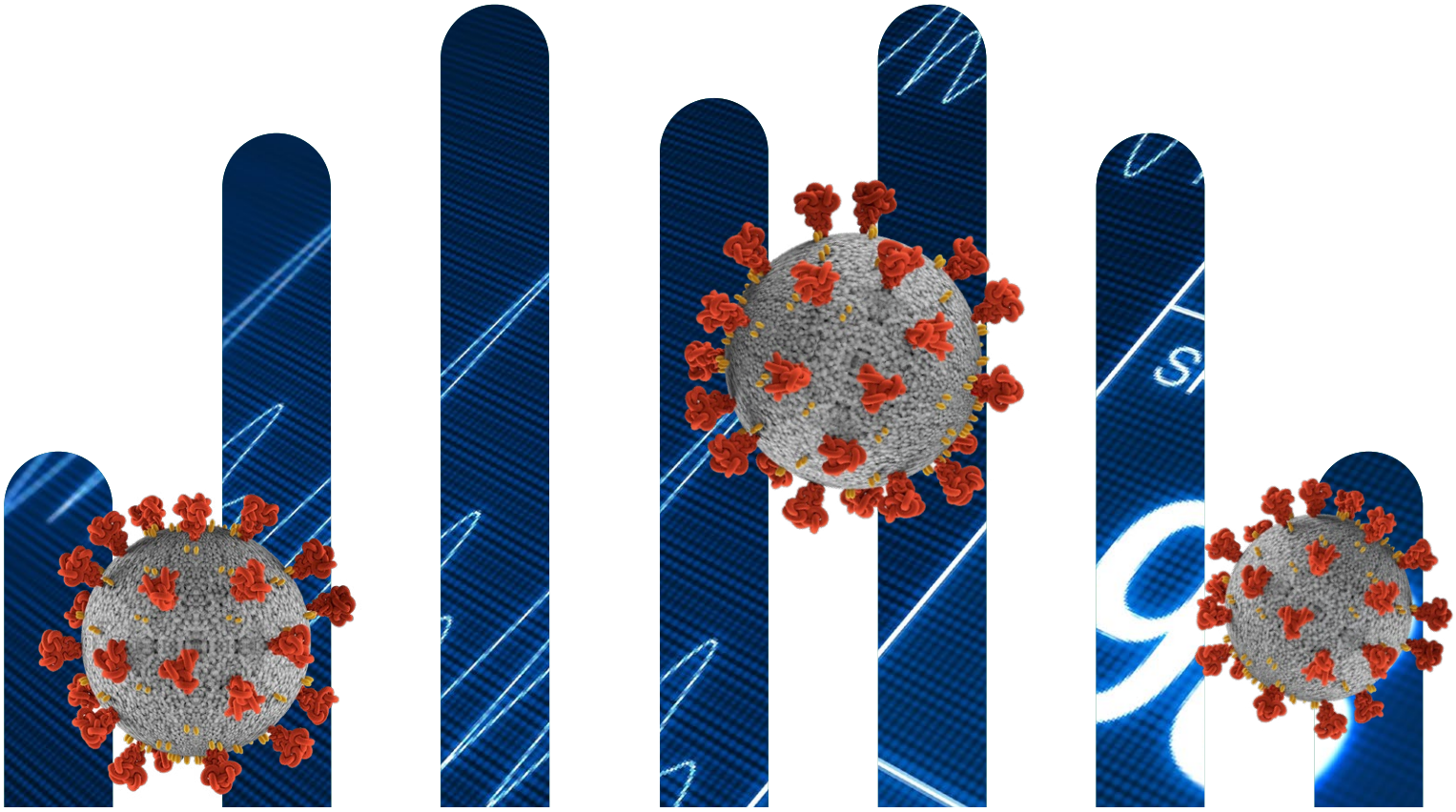
Telit Cinterion

Medisanté: Simplifying Remote Patient Monitoring with IoT

Medisanté and Telit Cinterion Enable Seamless Medical IoT Device Interoperability with Compliant Virtual Care Platforms Worldwide



The rapid embrace of connected health care solutions during the pandemic was astonishing. COVID-19 brought hesitation to doctor visits. However, within weeks, health care providers shifted from rare virtual visits to conducting regular internet-enabled appointments.

In this context, IoT-enabled remote health monitoring and home medical devices became critical to providing health indicator readings, including:

- Blood pressure
- Heart rate
- Blood glucose
- Temperature

The pandemic proved that digital transformation and technology adoption can happen faster than ever imagined. In a recent report, Berg Insight estimates that there were **56.8 million connected home medical monitoring devices** on the global market at the end of 2021. The number is expected to increase at a 14.2% CAGR and reach **126.1 million by 2027**.

These connected health care solutions are here to stay. As a result, punctual interactions between patients and their care teams are now the baseline for value-based health care. Large-scale remote patient monitoring device deployments are expected to deliver better outcomes for older and chronic patients. They will also make outcomes measurable for national health care systems.

Remote Patient Monitoring Improves Care Outcomes at a Lower Cost

The pandemic placed enormous pressure on global health systems. However, the industry has long been stressed by challenges, including:

- Improving care in the face of rising costs
- A growing number of patients, as people are living longer than ever
- Ever-rising age-related chronic conditions

Remote patient monitoring is poised to transform global healthcare delivery while drastically reducing costs. In addition, it supports many older adults who "age in place" independently at home.

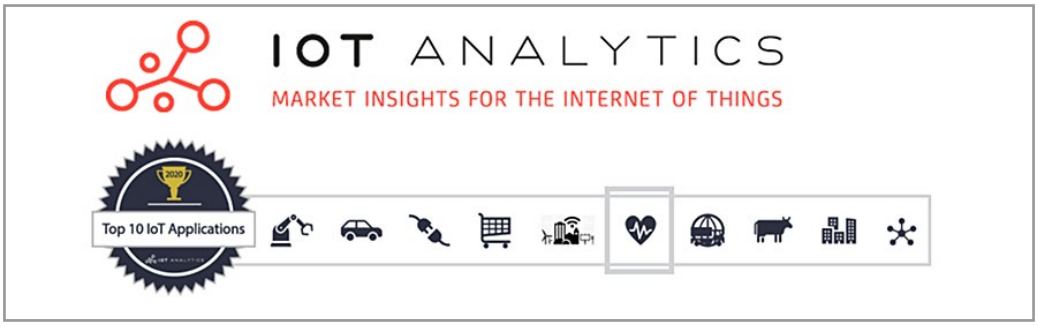
However, integration and security concerns persist. Traditionally, remote patient monitoring is achieved by collecting readings from a medical device that uses *Bluetooth*® wireless technology. A vendor app on a smartphone or tablet, which serves as the home's cellular hub, sends the data to a proprietary device cloud.

Unfortunately, this deployment method is fraught with connectivity failures and security vulnerabilities. Moreover, various health care platforms interpret data from individual devices, which causes backend interoperability headaches for health care professionals.

Remote Patient Monitoring and Decentralized Clinical Trials with Global Cellular IoT

Medisanté, an innovator in medical IoT, has launched a direct-to-cloud medical IoT platform. The Medisanté Hub simplifies the remote patient monitoring ecosystem and easily integrates patient-generated health data into compliant health IT systems.

The Medisanté Hub is successful because it brings secure cellular IoT connectivity to patients' homes without bothering them with device configuration via vendor apps. The readings are reliably and automatically transferred to the care team when the device takes the measurements. In addition, Medisanté and Beurer partnered to offer a seamless, secure device experience in virtual care.



Medisanté ranked among the top two IoT platforms for health care. (Source: IoT Analytics)

Partnering with an IoT Leader to Connect and Manage Device Performance

Medisanté collaborated with Telit Cinterion, a global leader in secure IoT, to develop a cellular IoT connectivity solution. It would seamlessly deliver secure readings to health IT systems in remote patient monitoring and decentralized clinical trials regardless of device location. The Medisanté solution integrates Telit Cinterion's ultrareliable 4G LTE IoT modules and IoT SIM cards for zero-touch global cellular connectivity.

These tiny IoT modules deliver reliable connectivity. They are directly embedded into a medical device or a gateway with cellular and Bluetooth technology. Though these modules are packed with features, they are small enough for the most size-constrained hardware in patient homes.

The modules' powerful embedded processing engine boosts device processing power. Moreover, they support device configuration over the air (OTA) to enable life cycle management that keeps medical device performance at peak. Remotely pushing secure software updates to devices eliminates physical updates at the doctor's office. In addition, it provides cost and time savings, especially for worldwide medical device deployments.

Embedded IoT Modules Enable Direct-to-Cloud Connectivity

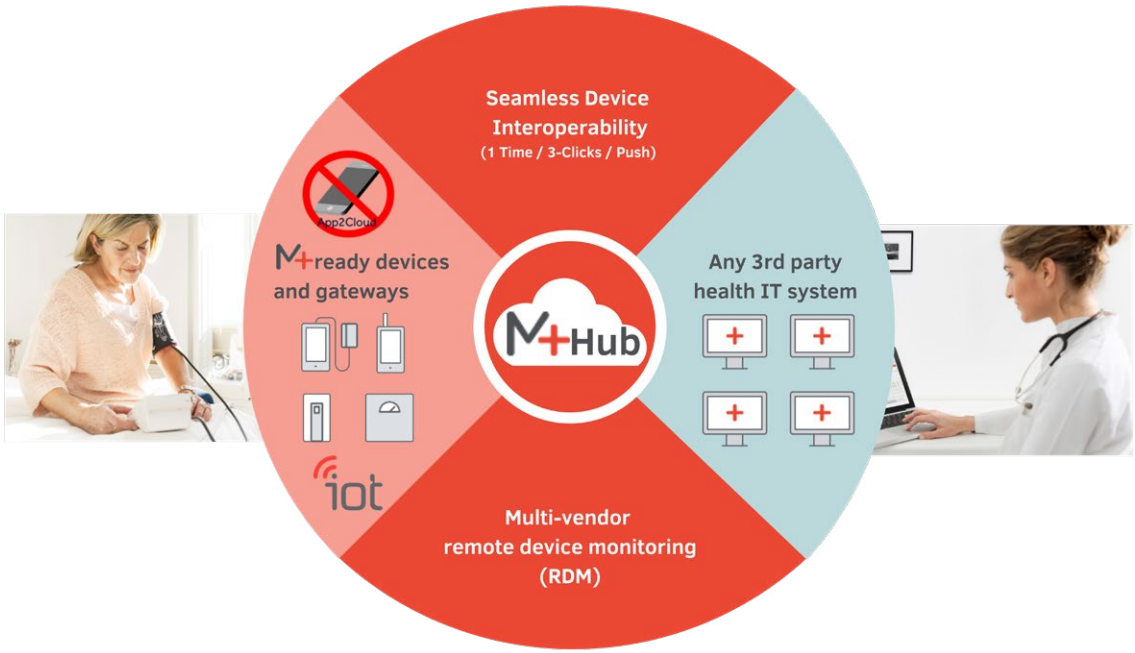
The Telit Cinterion IoT connectivity solution is embedded in the Medisanté medical monitoring device suite, including:

- Blood pressure monitoring devices
- Blood glucose monitoring devices
- Body composition scale

This solution is also embedded in a gateway that can connect up to five devices with Bluetooth technology direct-to-cloud (D2C) instead of app-to-cloud (A2C). It enables data collection for multiple vital signs, such as:

- Blood pressure
- Blood glucose
- Temperature
- Blood oxygen saturation (SpO2)
- Weight

The Telit Cinterion solution can be integrated with any other medical device and equipment that must communicate with the Medisanté Hub. Telit Cinterion and Medisanté allow medical devices and gateways to securely send data over cellular networks to the cloud-based Medisanté Hub. This eliminates going through an app on a smartphone or tablet in patient homes. D2C connectivity in the home keeps device deployment simple and secure at scale for remote patient monitoring and decentralized clinical trials in any environment.



Seamless Worldwide Medical IoT Device Interoperability

The AWS-based Medisanté Hub is compatible with various medical IoT devices and gateways. The devices don't have to speak the same language. The Medisanté Hub receives raw device data from many devices over cellular networks. It normalizes it before sending it to any target clinical backend system in formats, including:

- FHIR
- HL7
- XML
- JSON

The Medisanté Hub acts like an IoT mail carrier. It delivers a seamless global medical IoT interoperability between home-based devices and gateways with compliant health IT systems. The vendor-agnostic Medisanté Hub abstracts multiple IoT devices in one cloud. It redefines device management and interoperability while shielding care teams from:

- Device complexity
- Network setup
- Privacy risks

Secure Transfer of Non-Identifiable Device Data to Compliant Health IT Systems

The Medisanté Hub allows health care providers to collect medical readings in compliant backend systems without unveiling patient identities to any device vendor.

The Medisanté Hub receives non-identifiable device data (e.g., device 33, blood pressure 120/80, battery level 4.5 Volts, target system 55). Vital signs are pushed automatically to a compliant health IT system (target system 55), where the readings enrich the record of the patient assigned to device 33. This ensures privacy by design and other security advantages, including:

- The non-identifiable device data transmission is fully encrypted over a global cellular network
- Data is transmitted through a double IPsec tunnel to the AWS-based device cloud
- Then it's pushed to the target health IT system utilizing the most advanced authentication methods the system requires

The Telit Cinterion and Medisanté solution's privacy and security are on another level compared to traditional options that rely on a device vendor app. It reduces cyberattacks and ransomware risks that plague the health care system and meets large-scale data collection initiative demands.

Medisanté Hub: Winner of a Prestigious Juniper Research Award

In 2023, Medisanté earned two prestigious awards from Juniper Research in the Digital Health Innovation category:

- Most Innovative Telemedicine Solution (Platinum Winner)
- Best Remote Monitoring Solutions (Gold Winner)

These awards recognize the Telit Cinterion-powered Medisanté Hub solution as a market-leading proposition and outstanding contribution to the industry.

Telit Cinterion and Medisanté empower connected health care by giving care teams secure, global access to real-time health indicators outside their hospital or practice. They pave the way to value-based health care in a data-driven world. Care teams can leverage innovative IoT and cloud technologies to deliver better health outcomes at a lower cost.

Speak with our IoT experts to get started on your remote patient monitoring solution.

Request a Consultation