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FROST & SULLIVAN BEST PRACTICES AWARD

REMOTE PATIENT MONITORING - GLOBAL

Enabling Technology Leadership 2019

Medisanté



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Background and Company Performance

Industry Challenges

Chronic diseases are responsible for eight out of ten deaths and up to 80% of healthcare costs worldwide — in the United States (US) alone, total costs represent approximately 16% of the gross domestic product, or almost $3.3 trillion.[1] Aging populations globally compound the issue, with the chronic disease burden creating unprecedented stress on primary and secondary care. A low nurse-to-patient ratio hinders continuous monitoring — posing a negative impact on patients' adherence to treatment protocols and overall clinical outcomes. Consequently, health systems are increasingly employing digital tools such as remote patient monitoring (RPM) and other forms of telehealth to radically transform healthcare service delivery.

RPM involves the use of telecommunications technology to enable patient monitoring devices to collect, store, and forward biometric readings to a healthcare provider. RPM covers both remote monitoring services and telecare solutions; in addition to monitoring patients' vital signs, it also delivers tools for assisted and independent living, such as social alarms, activity monitors, fall detectors, medicine management, and fire/flood/carbon monoxide detectors.

Frost & Sullivan analysis suggests that the RPM market is poised to accelerate as progress in value-based reimbursement (VBR) models advance the ability to support the current focus on chronic conditions, post-acute care, and long-term care management.[2] At the same time, the Internet of Things (IoT), artificial intelligence (AI), and Big Data analytics, as well as the potential impact for wellness applications, are ushering RPM deployment to new use cases. Overall, Frost & Sullivan expects the global RPM market to increase at a compound annual growth rate of 19.8% from 2017 to 2023.[3] With health systems worldwide moving towards value-based care and embracing emerging concepts such as population health management (PHM), care coordination, and patient engagement, Frost & Sullivan observes how RPM will assume an important role in data-driven environments that support VBR.

While connected care proliferation is inevitable, collecting patient-generated health data (PGHD) from remote patients remains quite challenging for healthcare providers. Care teams often experience disconnection from home-based patients. At the same time, stakeholders lack trust in data generated from personal health devices and mobile apps, as they simply do not have confidence that patients are doing their part correctly or, in some cases, honestly. The privacy of data generated remotely can also cause concern, acting as a deterrent to adopting digital health tools. In Europe, Frost & Sullivan points out that GDPR for data privacy and security will have a major impact on the collection, access, analysis, storage, and sharing of data in a healthcare ecosystem.

[1] https://www.cdc.gov/chronicdisease/resources/infographic/chronic-diseases.htm
[2] *Growth Opportunities in the US Remote Patient Monitoring Market, Forecast to 2023* (Frost & Sullivan, March 2019)
[3] *Remote Patient Monitoring Market in Europe, Forecast to 2023* (Frost & Sullivan, May 2019)

Unwieldy technical processes also hinder RPM for both patients and clinicians. Frost & Sullivan notes the technology stack around medical devices tends to operate in parallel silos; as a result, a given monitoring device requires multiple steps and devices, e.g., a smartphone, app download, Wi-Fi connection, and more. Elderly patients, in particular, do not adapt well to complex monitoring processes, thus minimizing patient adherence. Current RPM typically uploads sensitive PGHD into a global cloud — posing a security risk and obstacle to compliance. Therefore, it is difficult to execute large-scale RPM deployments — significantly reducing the impact and efficacy of remote patient monitoring technologies. Frost & Sullivan concludes that market participants who offer the scale of global tech while complying with national and local regulations for security and privacy will experience rapid adoption.

Successful RPM vendors will also provide both clinicians and patients a simple, out-of-the-box solution. Platforms must support bring your own device (BYOD), pre-packaged pathway, or customized RPM systems, as well as business models that enhance return on investment. Additionally, RPM vendors need to conform to regulatory agency privacy mandates - such as HIPAA in the US and GDPR in the European Union. Security is also an important factor. Market participants who offer a direct-to-cloud data transmission model will provide a significantly improved level of security and enjoy a distinct competitive edge.

Technology Leverage and Customer Impact

Founded in 2015 and headquartered in Lucerne, Switzerland, Medisanté provides secure and direct-to-cloud medical device connectivity to any clinical system. The globally accessible medical IoT hub is based on proven technology from Amazon Web Services (AWS). Frost & Sullivan recognizes how the company efficiently addresses connectivity problems in current RPM initiatives of healthcare providers by radically simplifying the integration of PGHD into their existing clinical systems.

Frost & Sullivan research reveals Medisanté's powerful partnership strategy is key to its success in streamlining RPM. By combining advanced technology from world-class technology partners including Vodafone (cellular IoT technology), Amazon Web Services (cloud infrastructure), and Gemalto (chip cards and enterprise-grade security), Medisanté makes RPM more accessible to care teams and patients while involving biomedical engineers to facilitate secure and cost-effective scaling. Specifically, it simplifies connectivity at the endpoint in the home of the patient in order to globally scale RPM using cloud technologies.

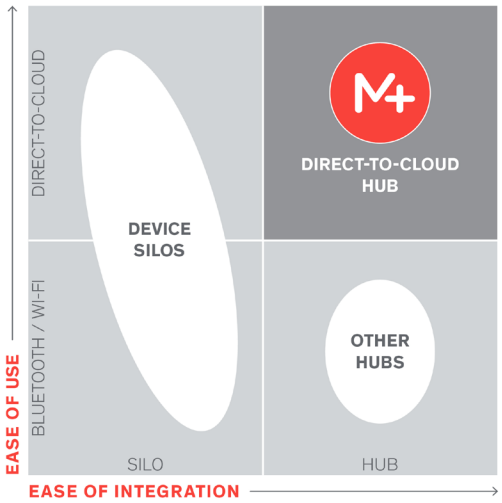
By embedding a global roaming IoT SIM card from Vodafone into the medical device, Medisanté eliminates the need to pair the medical device with a physical mobile gateway such as a tablet or a mobile phone. Device measurement values are directly transmitted from the home to the care team. And, because the so-called medical IoT device is rendered autonomous, it is much easier for physicians to assign it to their patients, and much easier for patients to use it. There is no need for any Bluetooth or Wi-Fi pairing, or downloading of mobile apps.

There is also no requirement for the patients to enter personal data or any other credentials since the device assignment to patients is done by healthcare professionals (HCPs) in their existing clinical systems. This enables fully anonymous data input that is HIPAA- and GDPR-compliant throughout the entire system.

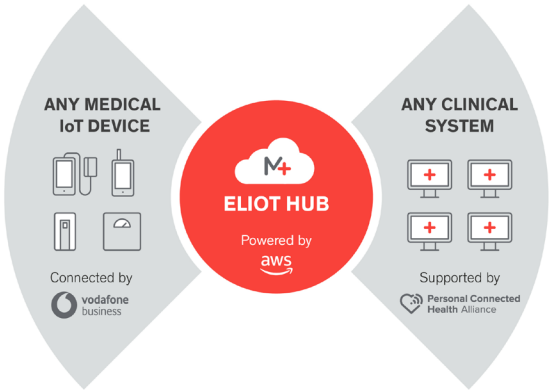
By leaving the patient identity within the clinical system and never unveiling it to any device vendor who would store it in its proprietary cloud, healthcare providers meet the highest levels of security and compliance for PGHD as the Medisanté medical IoT hub only manages anonymous data (e.g., blood pressure monitor No. 33, 120/80 blood pressure value, and 4.5 V battery level). The medical IoT hub is an Electronic Device Record (EDR) that can instantly leverage the power of the cloud to feed very large amounts of anonymous PGHD from multiple IoT device types into thousands of Electronic Health.

The Power of a Direct-to-Cloud Global Medical IoT Hub

Market Positioning of Device Silos vs. Hubs



Direct-to-Cloud Hub



Source: Medisanté

Empowering Connected Care through a Global Medical IoT Infrastructure

The company's clear focus on simplicity and scalability via global technology partnerships has resulted in industry-leading ease of use and ease of integration into clinical systems. Recent European pilot projects are proving the superior medical IoT infrastructure capabilities and Medisanté is quickly gaining market traction. The company anticipates connecting over five million devices within the next five years in support of the acceleration and deployment of healthcare RPM programs.

Frost & Sullivan notes the company's business-to-business telco-model provides options for device leasing, rental, and ownership — offering clients flexibility and further

influencing market adoption. Clients include healthcare providers, pharmaceutical companies, and clinical research organizations in Europe, the Middle East, and Africa.

Frost & Sullivan also notes that Medisanté is an emerging thought leader in connected care and medical IoT infrastructure. Presently, the company is a member of the Personal Connected Health Alliance, where it chairs the Direct-to-Cloud IoT Workgroup. In 2019, the company expanded to the US. While Medisanté currently focuses on commercializing self-branded medical IoT devices it also plans to provide an "M+Inside" standardized IoT connectivity board that is easy to leverage for third-party medical device original equipment manufacturers (OEMs). This will accelerate the emergence of a new ecosystem of IoT-enabled medical devices that are compatible with the Medisanté IoT hub.

The company's roadmap also includes realizing its technology's potential to replace hospital wires with a virtual IoT-based cable that provides end-to-end communication between devices. As 5G networks become mainstream, cellular connectivity in hospitals will increase and replace expensive and high-maintenance Wi-Fi networks. Today, the company is already preparing itself for Narrowband IoT (a low-power wide-area network radio technology not yet in the consumer marketplace) to maintain its visionary and cutting-edge position in the clinical enterprise space by empowering the next generation of IoT.

How It Works

The company offers a turnkey SaaS-based Remote Patient Monitoring platform (ELIOT Care) natively designed for its medical IoT devices, which include real-time blood glucose and blood pressure monitoring, a body composition scale, and an electrocardiogram event recorder.

Customization capabilities include color coding, thresholds, and the ability to filter and identify out-of-range data. With real-time PGHD measurements, analysis, and transmission, care teams can adjust care accordingly — leading to optimal patient outcomes. Main stakeholder benefits include cost savings, actionable insights for the physicians, and personal autonomy for patients.

This platform comes free of charge and is mostly used by healthcare providers during pilot phases before a decision is made to integrate the ELIOT Hub with their own clinical system or care management platform. This 2-step approach allows the healthcare professionals to gain confidence in the new workflow (assigning patient devices) and allows the biomedical engineers to check the technical merits of the hassle-free medical IoT infrastructure.

Client and Partner Testimonials

ELIOT Hub: The 1st Direct-to-Cloud Global Medical IoT Hub to Simplify and Scale RPM

"The global roaming IoT SIM card that is embedded in the Medisanté devices keeps it incredibly simple for the patient. The on-boarding of a patient by the care teams happens within our platform in a matter of minutes and keeps the identity of the patient there. The cellular connectivity works even in hospitals with poor GSM coverage. We expect Medisanté to vastly help us lower the costs of helpdesk support required vs. any Bluetooth/Wi-Fi set up we had previously."

- Frédéric Durand-Salmon, CEO, BEPATIENT

"Gnomon focuses on reusing global healthcare interoperability standards. Medisanté knew all of them, which facilitated immensely the integration of PGHD into the DM4All diabetes management platform of our consortium in the EU ProEmpower Pre-Commercial Procurement (Grant Agreement No. 727409)*. If a device becomes defective, we are also informed by ELIOT Hub, and we can easily replace or assign a different device*."

- Dr. Alexander Berler, Director Consulting Services, Gnomon Informatics SA.

"We enhanced the workflow in Sapphire Hospital Management System™ with the capability to connect to remote Medisanté medical IoT devices, allowing healthcare providers to access patient health parameters in a secure and seamless way. Because standard JSON or FHIR or HL7 technology is used, PGHD integration via a single global medical IoT hub on AWS made collection of anonymous readings more effective."

- Eduardo Oliveira, Regional Success Director – MEA, OutSystems

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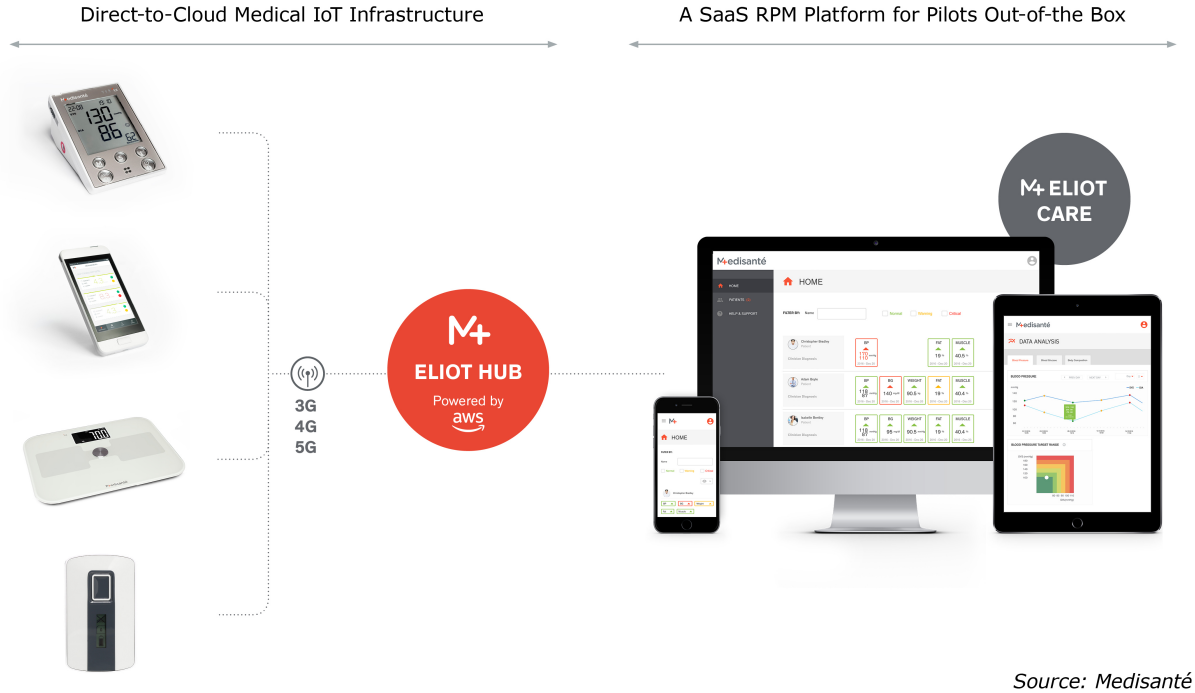
ELIOT Care: The 1st RPM Platform Natively Designed for Medical IoT

"ELIOT Care made the whole RPM workflow easy for our physicians and mapped well their needs out-of-the-box. We planned a whole day to become confident in using the SaaS platform and the IoT devices with our patients but it already worked perfectly after 15 minutes. Our physicians love to work with ELIOT Care because the platform has been natively designed to capture medical IoT device data without the hassle of Bluetooth."

- Daniel Löwe, CEO, Telcare24

A Global Direct-to-Cloud Medical IoT Solution



Source: Medisanté

Conclusion

As a leading driver for data-driven healthcare management solutions, remote patient monitoring (RPM) is fast becoming a standard of care worldwide. Medisanté leverages innovative technology to radically simplify the integration of PGHD into any existing clinical system of providers who want to expand their care remit to RPM. By allowing for the rapid scaling of RPM initiatives, Medisanté empowers connected care, and facilitates the implementation of a globally available medical IoT infrastructure. With its thought leadership, technical excellence, and unique ability to reduce healthcare costs while empowering better patient outcomes, Medisanté earns the 2019 Frost & Sullivan Global Enabling Technology Leadership Award in the remote patient monitoring market. For further information, see: www.medisante-group.com

Significance of Enabling Technology Leadership

Ultimately, growth in any organization depends upon customers purchasing from a company and then making the decision to return time and again. In a sense, then, everything is truly about the customer—and making those customers happy is the cornerstone of any long-term successful growth strategy. To achieve these goals through enabling technology leadership, an organization must be best-in-class in three key areas: understanding demand, nurturing the brand, and differentiating from the competition.



Understanding Enabling Technology Leadership

Product quality (driven by innovative technology) is the foundation of delivering customer value. When complemented by an equally rigorous focus on the customer, companies can begin to differentiate themselves from the competition. From awareness, to consideration, to purchase, to follow-up support, best-practice organizations deliver a unique and enjoyable experience that gives customers confidence in the company, its products, and its integrity.

Key Benchmarking Criteria

For the Global Enabling Technology Leadership Award, Frost & Sullivan analysts independently evaluated two key factors—Technology Leverage and Customer Impact—according to the criteria identified below.

Technology Leverage

Criterion 1: Commitment to Innovation
Criterion 2: Commitment to Creativity
Criterion 3: Stage Gate Efficiency
Criterion 4: Commercialization Success
Criterion 5: Application Diversity

Customer Impact

Criterion 1: Price/Performance Value
Criterion 2: Customer Purchase Experience
Criterion 3: Customer Ownership Experience
Criterion 4: Customer Service Experience
Criterion 5: Brand Equity

Best Practices Recognition: 10 Steps to Researching, Identifying, and Recognizing Best Practices

Frost & Sullivan analysts follow a 10-step process to evaluate Award candidates and assess their fit with select best practice criteria. The reputation and integrity of the Awards are based on close adherence to this process.

	STEP	OBJECTIVE	KEY ACTIVITIES	OUTPUT
1	**Monitor, target, and screen**	Identify Award recipient candidates from around the globe	• Conduct in-depth industry research • Identify emerging sectors • Scan multiple geographies	Pipeline of candidates who potentially meet all best-practice criteria
2	**Perform 360-degree research**	Perform comprehensive, 360-degree research on all candidates in the pipeline	• Interview thought leaders and industry practitioners • Assess candidates' fit with best-practice criteria • Rank all candidates	Matrix positioning of all candidates' performance relative to one another
3	**Invite thought leadership in best practices**	Perform in-depth examination of all candidates	• Confirm best-practice criteria • Examine eligibility of all candidates • Identify any information gaps	Detailed profiles of all ranked candidates
4	**Initiate research director review**	Conduct an unbiased evaluation of all candidate profiles	• Brainstorm ranking options • Invite multiple perspectives on candidates' performance • Update candidate profiles	Final prioritization of all eligible candidates and companion best-practice positioning paper
5	**Assemble panel of industry experts**	Present findings to an expert panel of industry thought leaders	• Share findings • Strengthen cases for candidate eligibility • Prioritize candidates	Refined list of prioritized Award candidates
6	**Conduct global industry review**	Build consensus on Award candidates' eligibility	• Hold global team meeting to review all candidates • Pressure-test fit with criteria • Confirm inclusion of all eligible candidates	Final list of eligible Award candidates, representing success stories worldwide
7	**Perform quality check**	Develop official Award consideration materials	• Perform final performance benchmarking activities • Write nominations • Perform quality review	High-quality, accurate, and creative presentation of nominees' successes
8	**Reconnect with panel of industry experts**	Finalize the selection of the best-practice Award recipient	• Review analysis with panel • Build consensus • Select recipient	Decision on which company performs best against all best-practice criteria
9	**Communicate recognition**	Inform Award recipient of Award recognition	• Present Award to the CEO • Inspire the organization for continued success • Celebrate the recipient's performance	Announcement of Award and plan for how recipient can use the Award to enhance the brand
10	**Take strategic action**	Upon licensing, company is able to share Award news with stakeholders and customers	• Coordinate media outreach • Design a marketing plan • Assess Award's role in future strategic planning	Widespread awareness of recipient's Award status among investors, media personnel, and employees

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The Intersection between 360-Degree Research and Best Practices Awards

Research Methodology

Frost & Sullivan's 360-degree research methodology represents the analytical rigor of our research process. It offers a 360-degree-view of industry challenges, trends, and issues by integrating all 7 of Frost & Sullivan's research methodologies. Too often companies make important growth decisions based on a narrow understanding of their environment, leading to errors of both omission and commission. Successful growth strategies are founded on a thorough understanding of market, technical, economic, financial, customer, best practices, and demographic analyses. The integration of these research disciplines into the 360-degree research methodology provides an evaluation platform for benchmarking industry participants and for identifying those performing at best-in-class levels.

360-DEGREE RESEARCH: SEEING ORDER IN THE CHAOS



About Frost & Sullivan

Frost & Sullivan, the Growth Partnership Company, enables clients to accelerate growth and achieve best-in-class positions in growth, innovation and leadership. The company's Growth Partnership Service provides the CEO and the CEO's Growth Team with disciplined research and best practice models to drive the generation, evaluation and implementation of powerful growth strategies. Frost & Sullivan leverages more than 50 years of experience in partnering with Global 1000 companies, emerging businesses, and the investment community from 45 offices on six continents. To join our Growth Partnership, please visit http://www.frost.com.